ANALYZING THE FINANCIAL CONDITION OF HIGHER EDUCATION INSTITUTIONS USING FINANCIAL RATIO ANALYSIS

Nancy J. Buddy, B. S., MBA

Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

May, 1999

APPROVED:

John Paul Eddy, Major Professor
P. R. Chandy, Minor Professor
James L. McDonald, Committee Member
William A. Miller, Jr., Committee Member
Ron Newsom, Coordinator of the program in Higher Education
Michael Altekruse, Chair of the Department of Counseling, Development, and Higher Education
M. Jean Keller, Dean of the College of Education
C. Neal Tate, Dean of the Robert B. Toulouse School of Graduate Studies

Buddy, Nancy J., Analyzing the financial condition of higher education institutions using financial ratio analysis. Doctor of Philosophy (Higher Education), May 1999, 85 pp., 7 tables, references, 52 titles.

The problem concerned the financial indicators used to evaluate the financial condition of the six sister higher education institutions under the authority of the Board of Regents of Oklahoma Colleges. The purposes were to determine the financial ratios that best indicate financial condition; to calculate those financial ratios for the six designated Oklahoma higher education institutions; and to evaluate and compare the financial condition of the six institutions. This study attempted to further the use of financial ratio analysis as an objective addition to subjective studies that examine an institution's definition of its mission, objectives, and goals and its own assessment of the degree to which its resources allow it to attain those goals.

The data were obtained from the Integrated Postsecondary Education Data System; the financial reports were audited by independent certified public accountants and presented to the Board of Regents of Oklahoma Colleges; and John Minter Associates, Inc., provided the national norms.

The set of financial ratios identified provides a means to study a single higher education institution through trend analysis and in comparison to national norms. It also works well with a sample of homogeneous institutions with interinstitutional comparison. The techniques are intended to provide a general profile of an institution’s financial health. Cause-and-effect ratio analysis has been proposed as another

technique to aid administrators in determining changes in their financial statements and what may have caused them.

The study identified a set of financial ratios that summarize the financial condition of a higher education institution. The ratios helped to analyze the financial solvency and viability of the six Oklahoma higher education institutions and focused on the ability of the institutions to meet current and future financial requirements.

The importance of financial statement analysis should not be underestimated. The understandable format of financial ratios allows virtually any stakeholder to acquire a basic comprehension of the most critical financial policies of institutions and their financial condition.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

The financial condition of higher education institutions is currently being questioned and evaluated. Many stakeholders interested in and involved with the allocation of resources to higher education are focusing on the impact of the economy on universities and colleges. This impact comes in many forms, with both short- and long-term effects. The basic capacity to support the resource claims of U.S. universities and colleges may be highly dependent on the continued robustness of U.S. economic growth (Nicklin & Mercer; 1998; Schmidt & Selingo, 1999; Shapiro, 1993). Adams and Palmer (1993) concluded from their study that the national economy is deteriorating. With the onset and continued strength of the bull market of the 1990s, major U.S. universities have prospered (Cottle, 1998). But the plunge in the Dow Jones Industrial Average on August 31, 1998, and the continued volatile behavior of the stock market has caused many university financial officers to invest endowments with caution (Cottle, 1998; Nicklin & Mercer, 1998). However, in March 1999, some experts claim the U.S. economy is the strongest it has ever been in its history. Yet this has not improved faculty salaries or government funding at many public universities in Oklahoma and Texas, who are far below the national average.

Sources of economic and financial crisis and reasons for concern for financial conditions include the following:

1. Stock market volatility—The bull market of the 1990s has allowed universities to increase their endowments (Cottle, 1998), but has held long-term investment strategies in check (Nicklin & Mercer, 1998).

2. Economic recession—Economic recession has eroded the financial resources of federal, state, and local governments (Brand, 1993; Duffey, 1992).

3. National policy—National policy has (a) eroded the tax base; (b) slashed federal support for domestic priorities; (c) generated a deficit that severely restricts government's ability to meet the country's basic needs; and (d) shifted responsibility to the states to finance major human service programs such as health care, welfare, and financial support for public higher education (AAUP Executive Committee, 1993; Schmidt & Selingo, 1999).

4. Limited resources—especially human resources (Brand, 1993). Federal funding has steadily diminished ("A Little Learning," 1997; Pratt, 1993).

5. Expanding enrollments—Baby-boomers' children are causing a demand for additional access to higher education. More nontraditional students are returning to higher education institutions, given the new educational requirements of the workplace (Brand, 1993; "A Little Learning," 1997; Pratt, 1993).

6. Rising tuition and fees—In contrast to expanding enrollments, rapidly rising tuition and fees have narrowed the pool of eligible students ("Adding It Up," 1997; Brand, 1993; Brimelow, 1998; Flower, 1998; Jackson & Hammonds, 1997).

7. Other sources of concern—These include inflation rates, tax policies, government budget policies, public regulatory policies, public policies with respect to

intellectual property, distance education policies, shifting economic balances among the various regions of the country, and the dynamics of the academic labor market ("Adding It Up," 1997; Flower, 1998; Shapiro, 1993). Investment policies of higher education institutions are also in difficulty (Murphy and Eddy, 1998).

The evaluation process in higher education is seeking information to aid in the improvement of internal and external accountability, efficiency, and effectiveness. In the literature, the frequently expressed reasons for the need for evaluation processes are (a) the need for improving program or institutional effectiveness; (b) the need for fiscal accountability for both the institution and to external forces; and (c) the need for improving program efficiency or the need for improving resource allocation decisions (cost effectiveness) (Jackson & Hammonds, 1997; Lewis & Wasescha, 1987; "A Little Learning," 1997). Higher education institutions must develop a high level of accountability while permitting flexibility to meet the challenge of change (Brand, 1993). These reasons are linked to the principal reasons of concern for financial condition (Murphy and Eddy, 1998).

According to Dickmeyer and Hughes (1979b), a university's overall circumstances can be meaningfully presented by measuring available resources, trends in these resources, and the institution's special need for these resources. Indicators developed with an audience in mind can be effective for communicating the financial condition of universities and colleges to internal and external entities. Several reasons have been advanced for measuring the comparative financial condition of colleges and universities: (a) the natural concern about the effectiveness of other institutions

competing for the same students, faculty, and resources, as each institution strives for better management and a competitive edge in higher education; (b) the need for measurement criteria to gauge the effects of current and proposed public policies on higher education institutions; and (c) the need for objective measurement criteria to gauge financial crisis and patterns to ensure institutional survival (Updegrove, 1982). Efforts to create objective measurement criteria reflect a desire to monitor measurable changes in financial condition and to maintain financial strength through the effective use of available resources. There is a clear-cut need for a tool to monitor changes in financial strength caused by changes in internal and external factors.

Many researchers (Chabotar, 1989; Cirtin & Lightfoot, 1996; Dickmeyer, 1983; Dickmeyer & Hughes, 1982; Eastaugh, 1980; Everett, 1995; Gomberg & Atelsek, 1981; Jenny & Minter, 1993; Lupton, Augenblick, & Heyison, 1976; Petro, 1998; Roden, 1991) have concluded that financial ratio analysis, which has been used for many years by financial analysts in business, could also serve to evaluate efficiency, effectiveness, and accountability in higher education. For example, Lupton et al. (1976) introduced ratio analysis to higher education in 1976, and the NACUBO and John Minter Associates have pioneered the use of financial ratio analysis (Chabotar, 1989). Financial ratio analysis allows for the evaluation of past performance and for planning the future of higher education institutions.

Statement of the Problem

The problem of this study concerned the financial indicators used to evaluate the financial condition of the six sister higher education institutions under the authority of the Board of Regents of Oklahoma Colleges using financial ratio analysis in this process.

Purposes of the Study

The purposes of the study were (a) to determine the financial ratios that best indicate financial condition in higher education institutions, (b) to calculate those financial ratios for the six designated Oklahoma higher education institutions, and (c) to evaluate and compare the financial condition of the six institutions.

Research Questions

This study sought to add to the body of knowledge concerning the use of financial ratio analysis as a tool for indicating the financial condition of higher education institutions. Three questions were addressed:

1. Which ratios or combination of ratios most successfully indicate the financial condition of higher education institutions?

2. If the financial condition of a higher education institution can be assessed using financial ratio analysis, how do the ratios help identify the areas of financial concern?

3. Given sufficient similarities among higher education institutions in terms of size, mission, and sources of revenue, what evidence is there that interinstitutional comparisons can be made?

Significance of the Study

With increasing competition for students, rising costs, higher tuition and fees, shifting demands for undergraduate fields, and reductions in public funding, many of America's higher education institutions are confronted today with financial problems more serious than have ever been imagined. Proof of the increasing problem of funding higher education was seen in the decrease suffered in college and university endowments after the October 1987 stock market "crash." As reported in the Denton (TX) Record-Chronicle on May 23, 1988, fifty of America's wealthiest colleges and universities lost $100 million or more in endowment funds during the fourth quarter of 1987 as a result of the stock market correction (Connell, 1988).

Ever-increasing burdens on the federal budget, a continuing economic recession, and the constant call for reduced deficit spending have consequently forced education to "occupy something less than its former exalted status on the legislative appropriations agenda" (Fey, Fuller, & Payton, 1977, p. 9). As the federal government has decreased its support to higher education, state and local governments also have been limiting their levels of support. The effect, in most cases, has been a decrease in the percentage of total funds allocated to higher education.

Understanding the financial condition of higher education institutions is an important part of the decisions-making process necessary to respond to these pressures. Many researchers have concluded that financial ratio analysis could be used to gather the physical evidence of any deviations from the norm. The use of financial ratios allows management by exception. A good analysis of the financial condition and

prospects of an institution can help guide policy decisions; financial analysis can also provide early warnings of approaching crises (Dickmeyer, 1979).

Although financial ratio analysis has been used since early in the 20th century in the business world, the application of ratio analysis in higher education is not a well-established practice (Roden, 1991). This study attempts to further the use of financial ratio analysis as an objective addition to subjective studies that examine an institution's definition of its mission, objectives, and goals and its own assessment of the degree to which its resources allow it to attain those goals.

Objective financial ratio analysis uses indicators that facilitate the quantitative description of the current state or condition of a higher education institution. The indicators can help identify how and in what ways the condition is changing (Collier & Patrick, 1978). An indicator whose trend indicates consistently whether conditions are getting better or worse allows management by exception and alerts the institution to the possibility of future financial distress.

Financial ratio analysis can aid both the institutional user and those agencies that must make funding decisions. By identifying a manageable number of quality ratios, the presentation of financial data may be more efficient and tell a better story—give a better picture of the true financial condition of the institution of higher education. The reduction of a large mass of numbers into a few manageable, easily interpreted ratios will allow both internal and external entities to make better-informed decisions.

Ratios are excellent tools for facilitating the communication, analysis, and understanding of large masses of complicated, detailed information. However, no

single ratio or set of ratios can ever provide all the answers to all the questions. It is not necessary that financial ratios be completely comprehensive and perfectly predictive in order to be useful. No single financial ratio can reflect financial condition perfectly (Taylor, 1984). The strength of financial ratio analysis lies in the usefulness that ratios have in developing tentative solutions to basic questions. The best indicators are those that indicate the direction and magnitude of change most effectively and most often.

According to Finn (1979), "Developing useful indicators is difficult and challenging, but many important needs can be met through their effective use" (p. 83). In simplest terms, a ratio is the relationship between two numbers. The ratio's value lies in its ability to impart greater information than is readily distinguished from each of the numbers standing alone.

Work on financial ratio analysis for higher education institutions has aimed at clarifying perceptions and making judgments of financial distress more credible. Financial ratios can also have the reverse use, to identify what is unique about a higher education institution. The most frequently cited motivation for financial ratio analysis is the ability to control for the effects of size difference over time and across institutions (Chabotar, 1989).

Business officers seek precision in the financial ratios used in determining the current and future financial condition of higher education institutions. Few modifications have been made in the formulation, critical application, and analysis of the financial ratios in use today. A slight redefinition of revenue may help to present

the true financial condition of a higher education institution from a clearer perspective (Jenny & Minter, 1993).

Limitations of the Study

Higher education institutions are more complex financial organizations than is normally the case in business. When all of the divergent financial data available for analysis are condensed into a minimum number of financial ratios, caution must be exercised in using financial ratio analysis. Thorough research must be conducted and careful testing must be done to determine the validity of the results (Finn, 1979).

With the growth of financial ratio analysis as a significant management tool in higher education institutions, many administrators assume that ratios provide a basis accurately to interpret the information found in the financial statements. Without understanding certain implicit assumptions about financial ratio analysis, chief financial officers and top administrators run the risk of being misled about the financial condition of their institutions (DiSalvio, 1989).

Four areas of concern and caution must be considered when using financial ratio analysis:

1. As with financial ratio analysis in the business world, the accounting procedures used by each institution of higher education studied must be considered. Under the Financial Accounting Standards Board (FASB), several different accounting procedures for revenues and expenses are acceptable. A standardized set of accounting procedures must be used by all institutions studied before a reliable comparison among institutions can be made. If no such procedures exist, then conclusions cannot be

drawn concerning the financial condition of one institution relative to another. The specialized accounting and auditing practices for colleges and universities appear in the industry audit guide titled Audits of Colleges and Universities and in Statement of Position (SOP) 74-8, titled "Financial Accounting and Reporting by Colleges and Universities." The main body of preferable accounting principles for nonprofit organizations appears in SOP 78-10, titled "Accounting Principles and Reporting Practices for Certain Nonprofit Organizations." Statement of Position 78-10 states that financial information prepared for internal use may be reported in any manner that management or the governing board of a higher education institution deems appropriate under the circumstances. However, financial statements prepared for persons outside the management of the institution must be prepared and presented in conformity with Generally Accepted Accounting Principles (GAAP) (Baily & Miller, 1993).

2. Further consideration should be made concerning the accuracy of the data that are reported via questionnaire. The review of the literature suggests that the type of data used for this study is sufficiently accurate for comparisons across time within one institution and interinstitutionally, using due caution. Interrelationships among various segments of Integrated Postsecondary Education Data System (IPEDS) have been established to avoid duplicative reporting and to enhance the policy relevance and analytic potential of the data (Davis & Sonnenbert, 1993).

3. Inflation can complicate the use of financial ratio analysis. It can distort the financial ratios and, without appropriate adjustments being made, can distort the interpretation of any observed trends, both over time and across institutions.

4. Finally, financial ratios focus on the quantitative relationships between numbers rather than on the nature of the change. The change over time may have been deliberately caused by a necessary adjustment to an account for a specific administrative or legislative purpose. With the addition of subjective analysis, a trend that might appear negative could be explained and determined to be a positive development.

CHAPTER 2

REVIEW OF RELATED LITERATURE

During the 1960s and 1970s, numerous publications, conferences, and workshops were devoted to the subject of ratio analysis. Nathan Dickmeyer and K. Scott Hughes made only a few modifications during the 1980s. John Minter Associates have published the most recent study dealing with financial ratios. Their findings were incorporated into this study.

Lupton, Augenblick, and Heyison (1976) used a panel of experts, as well as discriminate analysis, to determine 16 discriminating indicators of financial condition. The indicators include institutional control, enrollment trends, trends in education and general expenditures, current fund revenues to expenditures, academic expenditures to education and general expenditures, freshman full-time equivalents (FTEs) to total undergraduate FTEs, and tuition and fees to student aid revenues.

Collier and Patrick (1978) conducted theory-based research and developed a set of dimensions that describe financial condition. These dimensions included financial independence, revenue drawing power, financial risk, revenue stability, and reserve strength. Collier and Patrick also used experts and discriminate analysis to determine the indicators that discriminated between strong and weak private institutions and between strong and weak public institutions.

Jenny (1979) concluded the following from his study:

1. Cash flows in the short- and long-run have value both in management and in policy making.

2. Studying an institution's changing revenue structure can provide managerial and policy information.

3. It is possible to conclude that comparative studies should and can lead to more than statistically derived norms for judging an institution's financial performance.

Brubaker (1979) synthesized 40 studies on financial ratio analysis. He found that the literature reveals no single summative indicator of financial condition. In fact, theorists and researchers, evidencing disagreement over definitions of financial condition and indicator selection, have proposed several hundred indicators.

Dickmeyer (1979, 1980, 1983) and Dickmeyer and Hughes (1979a, 1979b, 1982) have conducted several studies concerning financial analysis and financial conditions in colleges, universities, and community colleges. Dickmeyer and Hughes (1979a) have also developed a workbook for the self-assessment of financial conditions of small independent colleges. The general findings included the following:

1. It is possible to monitor institutional financial conditions.

2. Indicators can be constructed from Higher Education General Information Survey (HEGIS) data.

3. Ratio analysis has powerful analytic capabilities.

4. A good analysis of the financial condition and prospects of higher education institutions can help guide policy decisions.

5. No single measure captures the "financial health" of an institution.

Taylor (1984) concluded from her research that interpretation of a financial indicator rests on an assumption of what constitutes "sound" financial condition. No single financial ratio will reflect financial condition perfectly. Financial ratios do not have to be perfectly predictive to be useful.

Lane, Lawrence, and Mertins (1987) dealt with the question "Can inter-institutional comparisons actually change a state's higher education budgeting?" (p. 83). Their conclusion was that, if interinstitutional analysis cannot change politics and the political world, it can at least change the way budgeting is performed. Change does not happen immediately, and the greatest impact of the approaches reviewed by the authors was on long-range attitudes and the way in which budgeting and resource allocation is conducted in the future.

Woelfel (1987) presented an argument for financial statement analysis using financial ratios. He recommended ratios in four categories: balance sheet, operating, contribution, and allocation. He felt that, in spite of the limitations of ratio analysis, it is an important technique for financial statement analysis "because ratios reflect fundamental relationships that exist in an institution" (p. 96). He concluded that the four categories of financial ratios provide the basis for a comprehensive and integrated study of higher education institutions.

Chabotar (1989) translated financial ratio analysis from the business world into the nonprofits' world. He concluded that, with the proper safeguards, financial ratio

analysis could serve as an "early warning system" for financial distress in higher education institutions.

Roden (1991) sought to determine the degree to which a number of independent fiscal ratios could predict changes over a period of 5 consecutive years in a sample of New York State universities. He concluded that financial ratio analysis provides a framework for inquiry into the financial condition of higher education institutions.

"Communicating Financial Data" (1993) is a conversation among independent college officials discussing the financial crisis facing higher education institutions today and ways of communicating financial condition to and establishing trust with internal and external entities. Simple, understandable financial indicators are one way of imparting information concerning future financial condition.

Jenny and Minter (1993) stated that "ratio analysis is a well-established, useful, and respected tool in higher education financial reporting" (p. 31); however, they suggested some modification to several revenue contribution ratios to make the ratios more realistic so that the public could better understand them.

Everett (1995) discussed balance sheet and income statement information developed by private-sector companies and the financial ratios that have been developed to guide corporate decision making. The author then discussed the various public-sector reports that school districts create and how they can be used to create decision-making information via financial ratios to help school administrators and policymakers to manage school district affairs.

Cirtin and Lightfoot (1996) discussed the need for a financial ratio model that would enable valid ratio analysis and interinstitutional comparisons among private colleges. The authors believed a model should be developed that included a standard set of financial statement values and incorporated a spreadsheet program.

Petro (1998) reported on the use of ratio indicators by the Government Finance Officers Association in Ohio. The office used ratios to benchmark performance, determine government practices, and identify potential problems. The author suggested the ratios discussed might also provide an overview of fiscal condition for higher education institutions.

CHAPTER 3

METHODS AND PROCEDURES

Procedures for Collection of Data

The data were obtained from three sources. The Education Information Branch, Capitol Place Building, Suite 300, 555 New Jersey Avenue NW, Washington, DC 20208-5641, (800) 424-1616 provided one source of data. The source was the Integrated Postsecondary Education Data System (IPEDS), an annual series of surveys conducted by the National Center for Education Statistics (NCES) that provides a variety of data on the United States' 10,500 public and private postsecondary institutions. Higher education institutions report annually on expenditures, revenues, enrollments, library holdings, and other factors, following a standard reporting format, which should make interstate and interinstitutional comparisons more straightforward. IPEDS finance surveys use the guidelines and definitions specified by the American Institute of Certified Public Accounts (AICPA) in Audits of Colleges and Universities.

The IPEDS supersedes the Higher Education General Information Survey (HEGIS). The HEGIS finance data set, due to its comprehensiveness and frequency of collection, constituted what was considered to be both the primary source of information about higher education's finances, as well as the primary financial database for research in higher education until 1986 (Patrick & Collier, 1979). The HEGIS contains data collected from 1965 to 1986. The change to IPEDS allows for the

correction of many of the problems associated with the HEGIS surveys. The IPEDS uses a consistent set of common data elements that apply to all providers of postsecondary education data. With IPEDS, it is possible to take into account the problems involved in trying to make interstate and interinstitutional comparisons, using the NCES postsecondary data, and to address many of these problems through the use of clarifying questions—questions that ask what was or was not included in a reported count or total.

The financial reports audited by independent certified public accountants presented to The Board of Regents of Oklahoma Colleges for each of the six institutions provided a second source of data. The certified public accountants were Ernst and Young, 1700 Liberty Tower, 100 North Broadway, Oklahoma City, Oklahoma, for years 1989 and 1990; and Stanfield and O'Dell, Tulsa, Oklahoma, for years 1991, 1992, and 1993.

The "industry" ratios or national norms were provided by John Minter Associates, Inc., Management Ratios #8 Statistical Norms for Colleges & Universities, 1994. The data sources are for the years 1991 to 1993.

The Sample

To make comparisons among higher education institutions, comparable peers must be selected. Program comparability was the first criterion in this selection. Other considerations included size, location, tuition and fees, accounting procedures, and budgets. The higher education institutions under the authority of the Board of Regents of Oklahoma Colleges were comparable in the criteria developed for this study.

Comparisons among higher education institutions that pride themselves on their autonomy can be complicated. The natural geographic group of peers selected for this study, the complementary aspects of being governed by the same board of regents, and the use of IPEDS data, which provide uniformity of available data, gave a reasonable balance that afforded both a common sense appeal and a technically valid basis for comparisons.

The purpose of institutional comparisons is to highlight differences and to raise essential questions about past and future policies for internal and external entities. Many higher education institutions differ from comparative peers for good and valid reasons. The argument might be that, when an understanding is reached as to why an institution scores differently from its comparative peers, a conclusion can be drawn as to what is unique about that institution.

The Oklahoma higher education institutions selected for this study were the University of Central Oklahoma (UCO), Edmond; East Central University (ECU), Ada; Northeastern State University (NESU), Tahlequah; Southwestern Oklahoma State University (SWOSU), Weatherford; Northwestern Oklahoma State University (NWOSU), Alva; and Southeastern Oklahoma State University (SEOSU), Durant.

Procedure for Analysis of Data

The financial ratios used were selected after careful consideration of the literature encompassing financial ratio analysis (Brubaker, 1979; Chabotar, 1989; Cirtin & Lightfoot, 1996; Dickmeyer, 1979; Lupton, Augenblick & Heyison, 1976; McCoy, 1982; D. E. Miller, 1972; R. I. Miller & Miller, 1991; Petro, 1998; Woelfel,

1987). The financial ratios use data readily available from the IPEDS surveys and audited financial statements, and they cover a broad spectrum of higher education institutions' activities to provide a complete picture of the institution's financial condition. A wide range of higher education institutions uses several ratios: liquidity, debt capacity, sources of funds, net operating results, financial reserves, and cause-and-effect.

Measures of Liquidity

Liquidity is the ability to convert current assets into cash with a minimum of loss. Current ratio is one of the most common indicators of financial strength. The basic issue underlying this ratio is the ability to meet current obligations with a margin of safety in case of loss of value in various current assets. Current means that the assets are convertible into cash within one accounting period or less and that the liabilities must be paid during the same accounting period.

The current ratio data used are unrestricted current funds that provide a better indicator of liquidity. Restricted current funds are subject to use for current operating purposes and those monies stipulated by individual donors as to the purpose for which they can be expended.

Current Ratio = Unrestricted Current Assets/Unrestricted Current Liabilities

For analysis, the benchmark is 2:1 or 2:0. That is, for every $2.00 of current assets, there should be no more than $1.00 of current liabilities for the institution of higher education to indicate financial strength. A 2:1 current ratio allows bills to be paid on time, discounts to be taken, and minimum interest on short-term debt.

A more severe test of liquidity is the quick ratio. It attempts to eliminate some of the disadvantages of the current ratio by focusing on liquid assets whose value is reasonably certain. Inventories and supplies are stated at the lower of cost, on a first-in, first-out bases, or market. The benchmark for the quick ratio is 1:1.

Quick Ratio = Unrestricted Current Assets - Inventories/ Unrestricted Current Liabilities

The available funds ratio is an even more conservative indicator. This ratio permits the institution to identify its true cash position. The benchmark for the available funds ratio is 0.75.

Available Funds = Cash + Short-term Investment/ Unrestricted Current Liabilities

Measures of Debt Structure

Higher education institutions often use short-term debt to equalize cash flows and long-term debt to finance buildings and other fixed assets. Measures of debt structure include the debt-to-equity ratio and the debt-service ratio. The debt-to-equity ratio tests the institution's capacity to obtain increased amounts of long-term debt financing. This ratio estimates financial risk exposure.

Debt to Equity = Plant Debt/Net Investment in Plant

Where: net investment in plant is equal to the value of the physical plant recognized on the balance sheet less any related liabilities. The suggested benchmark is 0.33.

For institutions with cash flow problems, the debt-service ratio is recommended. The debt-service ratio measures the relationship of principal and interest payments as

well as sinking fund obligations to revenues. The accepted benchmark is 20 percent of operating revenues, but 10 percent is better.

Debt Service = Debt Service/Operating Revenue

To measure the institution's commitment to continuing payments in proportion to its revenue sources in the intermediate-term, the ratio of **Restricted Income/Total Income** can be used. Heavy reliance on restricted revenues generally constitutes increased exposure to financial risk.

Sources and Uses of Financial Resources

Many of the financial ratios that higher education institutions apply measure from what sources financial revenues are earned and for what services expenses are incurred. This allows both internal and external entities to monitor institutional efficiency. The interrelationships that exist among financial resources require a comprehensive examination of the institution's total financial structure. A clear understanding of the trends in and the condition of the financial resources is important to the early detection of any institutional distress. Changes in resources are symptoms of those internal and external factors that cause financial distress or improvement. A higher education institution with sufficient financial resources can withstand adverse trends and has the flexibility to institute changes at opportune moments to reverse the trends. Resources merely provide the opportunity to be flexible through economic changes and experiment where possible without jeopardizing the institution's future.

Total revenues should be increasing at a rate comparable to the combined effects of inflation and program needs on total expenditures. Higher education institutions

should not become overly dependent on federal, state, and local government appropriations; private gifts and grants; tuition; user fees; or any single source of revenues. The financial ratios used to compare revenues to related expenditures are called contribution ratios (operating and nonoperating inflows), and include **Sources of Revenues/Total Expenditures** and net tuition where net tuition equals total tuition less unrestricted student aid grants. The trends in each of the contribution ratios should be monitored carefully. High tuition-dependence makes a higher education institution more susceptible to financial distress should enrollments suddenly decline.

Expenditure ratios are a much truer indicator of institutional priorities than any strategic plan, speech, or press release. The percentage of total expenditures being spent on each function or program reveals the extent to which the institution is efficiently managing funds.

Expenditures by Program or Function/Total Expenditures

These percentage ratios are also useful in determining whether a particular program is receiving an increasing or decreasing share of total revenues. Higher education institutions can also track fringe benefits, as well as the instruction proportion or the percentage of total educational expenditures committed to faculty salaries, curriculum development, departmental research, and other instructional costs.

Net Operating Results

Although higher education institutions do not exist to earn a profit, they cannot operate indefinitely with deficit budgets. A measure of surplus/deficit revenues has the benchmark: positive ratio equals a surplus, and negative ratio equals a deficit.

Net Total Revenues/Total Revenues

Where: Net total revenues equals all current operating revenues (both restricted and unrestricted) minus current expenditures and mandatory transfers.

The ratio **Current Fund Restricted Income/Current Total Unrestricted and Restricted Income** gives a measure of the riskiness of revenue flows. A trend toward increased dependence on restricted revenue could indicate a need for more sources of financial resources or increases in unrestricted financial resource sources. The uncertainty of restricted revenue suggests an increase in financial reserves to balance the risk (Dickmeyer, 1980).

Higher education institutions should also examine revenues and expenditures of educational functions separately from auxiliary enterprises in order to isolate the cause of any reported deficit. Recommended ratios include:

Net Education and General Revenue/Total Education and General Revenue

Tuition and Fees/Total Expenditures and Mandatory Transfers

Net Auxiliary Enterprise Revenue/Total Auxiliary Enterprise Revenue

Measure of Financial Reserves

Nathan Dickmeyer (1980) proposed a measure of financial reserves as a measure of institutional distress potential in privately controlled institutions and as an indictor of institutional financial resources of public institutions. This measure was used to indicate the changing ability of the six institutions in this study to survive fluctuations in the economy, to use their own funds, and to change both academic and administrative programs. A decrease in the fund ratio indicates a decline in the

flexibility that the institutions require to accommodate the changing needs of the community and students.

A*(Current Fund Balances/Current Fund Expenditures)
+ B*(Endowment Fund Balances /Current Fund Expenditures)

Where A and B are positive, and A + B = 1.

A greater weight (A) was given to current fund balances to recognize the restrictions on or the lack of endowment assets. The fund ratio is a weighted combination, with current fund balance representing short-term financial resources and endowment fund balances representing long-term financial resources. Both restricted and unrestricted funds are included. By calculating the fund ratio, an idea of the size of the reserves relative to the size of the yearly expenditures can be determined. It also has some intrinsic value because higher education institutions need financial reserves to protect the operations from external shocks (Dickmeyer, 1980)

Cause-and-Effect Ratios

Donald E. Miller (1972) set forth for business and industry a cause-and-effect ratio analysis based on 15 key financial relationships. Higher education institutions will find themselves in a particular financial position because of some cause or causes. The current position is the effect; the cause or causes must be determined. The 15 ratios have been applied and tested as a unified system in thousands of business situations and have demonstrated that, when used together, provide a fundamental financial understanding. This study isolated five of the nine effect ratios and three of the six cause ratios that can be used in a nonprofit service environment to aid in the

making of policy decisions. Policy makers will not become "all knowing," but application of this analysis allows sound estimates of the impact of particular actions (D. E. Miller, 1972).

The eight cause-and-effect ratios used exclude any ratios involving profit, sales, and inventory. They include assets, liabilities, net worth, receivables, and revenues.

Effect Ratios

Current ratio. The current ratio not only helps to indicate the institution's ability to meet current obligations, but it is also a measure of the margin of safety provided for meeting those current obligations if current assets were reduced in value. The current ratio tests quantity, not quality (D. E. Miller, 1972). After careful consideration of the components of current assets, the current ratio may indicate liquidity and flexibility. Both are essential for the achievement of many institutional goals.

Current-liabilities-to-net-worth and total-liabilities-to-net-worth. These ratios measure the operating freedom that administrators have by comparing the claim that creditors have on the institution of higher education to that of the "owners." If debt-to-net-worth ratios are excessive, outside entities may be demanding payment of debt or attempting to control financial decision making by administration. High current-liabilities-to-net-worth may cause greater financial distress in the current period than in the long-term (D. E. Miller, 1972).

As a nonprofit entity, a higher education institution has no shareholder section on its balance sheet, but it does have a fund balances section. The sum of the total

liability section and the fund balances section equals the total assets section. The fund balances consist of resources that are available for the purpose of performing the mission of each fund group. The fund balances include both restricted and unrestricted funds. This study used fund balances as a proxy for net worth.

Receivables-to-working-capital. Working capital equals current assets minus current liabilities. It represents the safety margin an institution has for the payment of current obligations if current asset values were reduced or if current funds were used for fixed or miscellaneous assets. Because receivables (accounts receivable, notes receivable, interest receivable) may be a component of working capital, and highly volatile, administrators need to measure the dependence that working capital has on the value of receivables (D. E. Miller, 1972).

Long-term-liabilities-to-working-capital. This ratio measures the extent to which an institution has borrowed new funds to replace working capital, the general purpose of long-term debt financing. If the ratio exceeds 100 percent, the long-term debt financing may be disguising operating losses. The ratio also indicates the possibility of future long-term debt financing and keeps administration apprised of the proportions between short- and long-term debt financing (D. E. Miller, 1972).

The preceding five ratios allow administrators to measure and study the effects of financial forces on the operation of higher education institutions. The following ratios help to determine financial balance and point to underlying causes of financial problems (D. E. Miller, 1972).

Cause Ratios

Fixed-assets-to-net-worth. This ratio measures the degree to which an institution's net worth is tied up in nonliquid, permanent, depreciable assets. It also measures the amount of funds available for further investments. An unusually high investment in fixed assets could adversely affect working capital and all other ratios related to working capital (D. E. Miller, 1972).

Revenues-to-net-worth. This ratio measures the extent to which an institution's current funds revenues, both restricted and unrestricted, are supported by fund balance resources. If this ratio is excessive, the institution of higher education may be what D. E. Miller (1972) refers to as an "overtrader," an institution stretching its fund balances to the maximum. An overtrader may be highly leveraged, have experienced a reduction in revenues from tuition and fees, or need to increase endowments and unrestricted sources of funds. Undertrading is indicated by a low ratio. It may not be as serious as overtrading because the leverage position is lower, but it may indicate a decline in enrollment. A lack of students could contribute significantly to the financial condition of a higher education institution.

Miscellaneous-assets-to-net-worth. Miscellaneous assets include all assets that are not current, fixed, or intangible. Among the assets classified miscellaneous are prepaid expenses and deferred charges, investment in other readily marketable securities, any long-term receivables, and cash value of life insurance. Commitment of an excessive amount of resources to miscellaneous assets restricts working capital and

the productivity of fixed assets and may increase an institution's debt position. This ratio is difficult to interpret and may help an institution in its analysis of financial condition only slightly, but serious differences between miscellaneous assets and net worth may have widespread effects (D. E. Miller, 1972).

Interinstitutional Comparisons

A single ratio needs to be related to something else. The same type of ratio viewed over time (trend analysis) provides substantially greater information than one ratio for one time period. Cross-sectional analysis, comparing a ratio for one institution with the same ratio to similar institutions or national averages, gains another useful perspective of relative financial condition. Comparing an institution's actual ratios with anticipated or budgeted ratios (sometimes called goal ratios) provides yet another view on performance (Minter et al., 1982).

To some extent, comparisons have been made more reliable by the development of uniform accounting and reporting standards for higher education during the 1990s. Colleges and universities are becoming more willing to learn from each other. The purpose of institutional comparisons is to highlight differences and to raise essential questions about past and future policies for internal and external entities. The argument is that, when it is understood why a college scores differently from its peers, an understanding of what is unique about it is often close (Kramer, 1982). Many institutions differ from comparative groups for valid reasons. Comparative information gives averages, not ideals. The results of interinstitutional comparisons, therefore, cannot be viewed as absolute truths. Rather, they become guidelines for more detailed

state and local reviews that take into account both the technical problems and the local policies and concerns.

Procedure for Analysis of Data

A financial ratio analysis was performed on the data obtained for each of the six Oklahoma universities for the period 1989 to 1993, using the IPEDS data and the audited financial statements. Measures used included liquidity, debt structure, sources of funds, uses of funds, net operating, financial reserves, and cause-and-effect. A trend analysis for each institution and cross-sectional analysis for interinstitutional comparison using national norms were also conducted.

A financial ratio shows the relationship between two numbers drawn from the institution's balance sheet, operating statement, and other related records. Analysis of a financial ratio provides a better understanding of financial conditions and institutional priorities than any of the data standing alone. Ratio analysis can serve as an "early warning system" by highlighting aspects of an institution's financial condition that merit further study and may require management action. Higher education institutions must carefully monitor their financial resources on a per-student basis in order to evaluate operating efficiency (Chabotar, 1989). A good analysis of financial conditions and prospects of a college or university can help guide policy decisions about tuition and fee levels, salary increases, staffing levels, and endowment payout rates. Financial ratio analysis can also be useful in strategic planning and accreditation self-study efforts.

Conclusions concerning the financial condition were drawn using each of the comparison procedures. The "forms of distress" discussed below were used to guide the conclusions.

Dickmeyer and Hughes (1982) believe that, to be financially healthy, a higher education institution should have the financial flexibility to respond to changes in the political, social, and economic environment in which it operates. Pressures that may affect a higher education institution adversely are inflation, increasing regulatory requirements, declining enrollment, increasing tenure ratios, and changing student academic interests. Higher education institutions must use their capacity to adjust their resources to meet these pressures (Dickmeyer & Hughes, 1982).

The interpretation of a financial ratio rests on an assumption of what is a stable financial condition. Understanding institutional financial condition implies that a standard exists by which relative financial strength can be judged. The "balanced budget" criterion alone is not adequate. The true key to stable financial condition may be in a higher education institution's ability to finance both short- and long-run expenditures (Jenny, 1979). A related way to view stable financial condition is to consider forms of distress affecting the ability of a higher education institution to provide high-quality instruction, research, or public service (Taylor, 1984). Forms of distress include the following:

1. "Working capital distress": The institution is unable to finance daily operating expenses (liquidity).

2. "Demand-related revenue distress": This is a result of lowered demand for the institution's services.

3. "Non-sales-related revenue distress": The institution cannot realize its historical levels of gifts and endowment income.

4. "Financial flexibility distress": The institution's resources are so restricted that it has no flexibility in their use (Patrick & Collier, 1979).

These forms of distress aid in the determination of the financial condition of higher education institutions.

According to Woelfel (1987), other possible areas of concern that may indicate financial distress may include either or both of the following conditions: (a) financial problems: illiquidity, funds shortage, continuing operating deficits, debt default, and others; and (b) operating problems: unclear vision of mission, inadequate control over operations, competition, lack of product market demand, and others. Financial ratio analysis will aid in isolating financial problems. Nonquantitative data and information have to be gathered to isolate operating problems.

Procedure for Reporting Findings

The findings for each university are presented in table form, with a discussion of the possible implications that the trends indicate for each university in each area of the ratio analysis: liquidity, debt capacity, sources and allocations of funds, net operating results, measure of financial reserve, and cause-and-effect. National norms are given when available for each ratio. The discussion compares each university to the national norms. Finally, a comparison across all universities is discussed.

CHAPTER 4

PRESENTATION OF FINDINGS

The findings for each university in the study are presented in table form in the appendix. An attempt has been made to present the data in a readable and easy-to-understand format. The trend given for each of the financial ratios refers to whether the change over time is favorable (+) or unfavorable (-) and not to the direction of the change, as suggested by Chabotar (1989). The use of a question mark (?) indicates that there was not a clear-cut trend in the ratio. Further analysis of any financial ratio lacking a discernable trend would be required for the ratio to make a meaningful difference in the overall analysis of that area.

Ratio Interpretation and Summary

Current Ratio and Other Liquidity Position Ratios

The current ratio measures the margin of safety provided for paying current debts. The quick ratio is an even more restrictive measure of liquidity. The higher the current and quick ratios, the more liquid the institution of higher education. The current and available funds ratios also present a general picture of the adequacy of the working-capital position. There is a need for working capital (current assets minus current liabilities) in both short- and long-term operations. Liquidity and flexibility are clearly essential to the achievement of many university goals.

Debt Structure Ratios

Debt may be necessary when a new facility is built or when required updates to current physical plant are undertaken. It is important to relate total plant liabilities and other long-term liabilities to income and fund balances to determine whether the trend is increasing or decreasing. The trend should be decreasing over the years as debt is retired unless new facilities are being built or remodeling is occurring.

Contribution Ratios

Government appropriations have been reduced, and the burden of support for higher education institutions has been shifted from the federal level to the state level. With this change in congressional priorities, the trend of less input to revenue from public sources to more input from private sources (gifts, private grants, and endowments) may become an institutional policy issue. The ratios of gifts-and-private-grants and endowment-income-to-educational-and-general-expenditures should be increasing. The important question may be, Are development goals keeping stride with inflation and the availability of private sources of support? Since inflation was becoming a non-issue toward the end of this study, the implication is that private sources will have to be called upon to meet everyday operational needs.

The ratio tuition-and-fees-to-educational-and-general-expenditures should be as low as possible. A decreasing trend would be favorable as long as the decrease came from an increase from outside sources of revenues rather than a decrease in enrollment.

Miscellaneous-revenue- (all assets that are not current, not fixed, and not intangible)

to-educational-and-general-revenue ratio should be kept low. The income provided by these revenues is neither constant nor reliable.

The ratios of total-current-fund-revenue-to-total-current-fund-expenditures and total-revenue-and-other-to-total-expenditures-and-other should be 100 percent or above. They should remain constant or be increasing. Auxiliary enterprise revenue as a percentage of total auxiliary enterprise expenditures should be at least 100 percent. The auxiliary enterprises should be self-supporting.

Allocation Ratios

Reductions in allocation ratios may occur because of a reduction in the revenue sources supporting these allocations. The allocation ratios should be constant or increasing. Allocation for data processing was a fairly new expenditure category during this study.

Net Operating Ratios

Net operating ratios are expected to be positive or increasing. This generally indicates that the current year's operation was in balance. A negative or decreasing ratio over time would indicate that educational and general expenditures, or auxiliary enterprise expenditures in the case of auxiliary revenue, are growing faster than the available revenue sources. A positive ratio in this category indicates a surplus, whereas a negative ratio indicates a deficit.

Financial Reserves

Total current fund balances divided by total current fund expenditures plus endowment fund balances divided by total current fund expenditures, each weighted to

show how short-term oriented the ratio is, provides an idea as to the size of the reserves in comparison to the size of the yearly expenditures. A figure of 50 percent would indicate that the institution of higher education could survive for one half a year on the reserves if no changes in expenditure levels were experienced. Dickmeyer (1980) suggested that an institution should set aside enough current fund reserves to cover a 2-year decline of 20 percent in enrollment.

Cause-and-Effect Ratios

Causal ratios focus on why financial statements are changing and not on just the change itself. Effect ratios, on the other hand, are used to determine the extent of the university's exceptions. They show that a change has occurred, its direction when a trend is considered, and its magnitude, but not the reason for the change. Not all directions of change are unfavorable. Some changes are favorable and desirable. Any reduction in working capital or fund balances necessarily changes any ratio involving those two major elements.

The effect ratios measuring liquidity are current ratio, receivables-to-working-capital, and total-revenue-to-working-capital. The current ratio not only measures liquidity, but it also presents a general representation of the adequacy of the working-capital position. A ratio that is too low indicates a reduction in the ability to conduct everyday operations. Receivables-to-working-capital measures the quality of net working capital. A ratio that is too high indicates that the university's liquidity is poor. Total-revenue-to-working-capital is used primarily during periods of increased enrollment. The higher the ratio, the greater the strain on working capital.

Leverage effects are measured with effect ratios current-liabilities-to-total-fund-balances, total-liabilities-to-total-fund-balances, long-term-liabilities-to-working-capital, and total-revenue-to-investment-in-plant. High debt ratios indicate the possibility of financial risk. A large amount of current liabilities indicates a more immediate financial risk and a reduction in the university's operating freedom. Heavy indebtedness is often a characteristic of attempting to increase the university's infrastructure too rapidly. Total-revenue-to-investment-in-plant measures the efficiency with which the university utilizes its investment in land, plant, equipment, furniture, and fixtures. A high ratio indicates the efficient use of plant and other capital assets.

The causal ratio investment-in-plant-to-total-fund-balances measures over investment in fixed assets. If the ratio is too high it may indicate too little working capital or over-utilization of debt. Total-revenue-to-total-fund-balances measures unrestrained growth, and net-revenue-to-total-revenue measures profitability. Even though a university is not a for-profit entity, it cannot afford to operate in the red. A positive bottom line is essential. If the preceding two ratios are high, the university's working capital may have reached its limit. A low ratio may indicate a decline in enrollment.

The cause ratio miscellaneous-assets-to-total-fund-balances measures the increase in other assets. This ratio should not be too high.

East Central University

All financial data for East Central University are located in the appendix, Table 1. A discussion of notable ratios follows.

Liquidity

The trend indicated a decrease in overall liquidity. This was unfavorable. Although the three measures of liquidity were still considered to be within the acceptable range, further analysis may have been warranted.

Debt Capacity

The overall debt structure was favorable. The trend showed a decrease in debt position. The ratio restricted-income-to-total-income, including both current and total funds, indicated a cause for concern, especially with the increase in the two ratios from 1992 to 1993.

Contribution Ratios

Government support from all sources, federal and state, decreased slightly, as did support from miscellaneous revenue sources. Support from miscellaneous revenue sources should be small because these are not regular sources of income. The declining trend in the ratio auxiliary-enterprise-revenue-to-auxiliary-enterprise-expenditures from 1989 to 1992 was not of concern if the increase from 1992 to 1993 continued.

The increase in gifts-and-private-grants-to-educational-and-general-expenditures was a favorable trend. The lack of endowment income should have been of concern, and development goals should have been established to provide for sufficient funds to allow for the development of an endowment program. The trend toward total-current-fund-revenue-to-total-current-fund-expense was also favorable, with an increasing trend.

Allocation Ratios

Instruction, public service, student services, institutional support, and operation and maintenance allocation ratios showed slightly decreasing trends for 1989 through 1992. This was unfavorable. Favorable increasing trends are indicated in academic support, data processing, and scholarships and fellowships.

Overall, sources of revenue showed appropriate favorable increases in the final year of the study. If these increases continued, ECU should have had sufficient revenues to support the corresponding increases needed in instruction, student services, and operation and maintenance.

Net Operating

Overall, the net operating ratios were strong, with favorable trends. These trends indicated that the current year's operations were in balance in most years; net-educational-and-general-revenue-to-total-educational-and-general-revenue was good; and auxiliary enterprises seemed to be self-supporting. The reasonably constant current-fund-balances-to-total-current-expenditures was as expected.

Financial Reserves

This ratio indicated an unfavorable trend. With no endowment income, this institution could survive only 1 to 2 months with a decline in enrollment.

Cause-and-Effect Ratios

The following were indicated by the analysis of the cause-and-effect ratios:

1. The current ratio declined. This decline reflected a tightening of working capital.

2. The receivables-to-working-capital increased. This rise reflected the drop in working capital.

3. The increase in total-revenue-to-working-capital also showed a strain on working capital.

4. Liabilities (current and total) decreased relative to fund balances from 1989 to 1992, but showed a sharp increase in 1993. This indicated a greater chance of financial risk.

5. The ratio long-term-liabilities-to-working-capital followed the same decreasing trend from 1989 to 1992, with a sharp increase in 1993. This increase also indicated the working capital reduction.

6. The investment-in-plant-to-total-fund-balances moved downward. That possibly explained the reduction in liquidity and net profit.

7. Total-revenue-to-total-fund-balances showed an upward trend, suggesting unsupported growth. The high ratio may explain the reduction in working capital, leading to reduced liquidity and an increase in leverage.

8. The ratio net-revenue-to-total-revenue did not have a clear trend, but the fact that it was low indicated the need to increase enrollment.

9. Miscellaneous-assets-to-total-fund-balances showed an increasing trend.

Northeastern State University

All financial data for Northeastern State University are located in the appendix, Table 2. A discussion of notable ratios follows.

Liquidity

The trend indicated a decrease in the current and quick ratios from 1989 to 1992. A reversal in that trend was experienced in 1993. The available funds ratio indicated that the true cash position was stronger than the current and quick ratios suggested. Although the three measures of liquidity were still considered to be within the acceptable range, further analysis was warranted, especially to determine the reason the available funds ratio presented a liquidity position different from the other two ratios.

Debt Capacity

The overall debt structure was favorable. The trend showed a decrease in debt position, with the exception of the debt-to-equity ratio. This ratio showed a slight increase, possibly indicating an increase in physical plant.

Contribution Ratios

All of the contribution ratios showed a favorable increase over the period studied, except for tuition and fees, which had no real pattern. Auxiliary enterprises seemed to become self-supporting over the period. The lack of endowment income should have been of concern, and development goals should have been established to provide for sufficient funds to allow for the development of an endowment program.

Allocation Ratios

Instruction, public service, and operation and maintenance showed slight unfavorable decreasing trends. Increasing trends were indicated in academic support,

student services, institutional support, data processing, and scholarships and fellowships.

Overall, sources of revenue showed slight favorable increases in the final year of the study. If these increases continued, NESU should have had sufficient revenues to support the corresponding increases needed in instruction, research, and operation and maintenance.

Net Operating

Overall, the net operating ratios indicated favorable trends. The current year's operations were in balance in most years; net-educational-and-general-revenue-to-total-educational-and-general-revenue was showing a deficit for most of the study, but the trend was a decrease in the deficit over time, and a surplus was noted in 1993. Auxiliary enterprises began to be self-supporting in the final 2 years of the period. The variability in current-fund-balances-to-total-current-expenditures warranted further investigation.

Financial Reserves

This ratio indicated an unfavorable trend. With no endowment income, this institution could survive only 1 month on its current reserves with a decline in enrollment.

Cause-and-Effect Ratios

The following were indicated by the analysis of the cause-and-effect ratios:

1. The current ratio declined. This decline supported a decline in working capital.

2. The receivables-to-working-capital had no recognizable pattern. This could support the favorable trend in the available funds ratio.

3. The increase in total-revenue-to-working-capital indicated a strain on working capital.

4. Liabilities (current and total) decreased slightly, relative to fund balances after a sharp increase from 1991 to 1992. This indicated a greater chance of financial risk.

5. The ratio long-term-liabilities-to-working-capital followed the same decreasing trend after a sharp upward movement in 1991. This decrease indicated the lessening of the strain on working capital.

6. The investment-in-plant-to-total-fund-balances moved downward. The decrease possibly explained the reduction in liquidity and the erratic behavior of the net-profit-to-fund-balances.

7. Total-revenue-to-total-fund-balances showed an upward trend, suggesting unsupported growth. The high ratio (approaching 100%) explained the reduction in working capital, leading to reduced liquidity and an increase in leverage.

8. The ratio net-revenue-to-total-revenue did not have a clear trend, but the fact that it was low and negative at times indicated the need to increase enrollment.

9. Miscellaneous-assets-to-total-fund-balances showed an increasing trend.

Northwestern Oklahoma State University

All financial data for Northwestern Oklahoma State University are located in the appendix, Table 3. A discussion of notable ratios follows.

Liquidity

The trend indicated a decrease in overall liquidity. This was unfavorable. Although the three measures of liquidity were still considered to be within the acceptable range, further analysis was warranted.

Debt Capacity

The overall debt structure was favorable. The trend indicated a decrease in debt position. The ratio restricted-income-to-total-income for current funds indicated a cause for concern, especially with the increase in the ratio from 1992 to 1993.

Contribution Ratios

The government appropriations as a percentage of educational and general expenditures from all sources, federal and state, was the only contribution ratio to show a decrease over time. The unstable trend in the ratio auxiliary-enterprise-revenue-to-auxiliary-enterprise-expenditures indicated a cause for concern because auxiliary enterprises did not seem to be self-supporting for 2 of the 5 years, and there was a decrease from 1992 to 1993.

The lack of endowment income should be of concern, and development goals should have been established to provide for sufficient funds to allow for the development of an endowment program. The trends for total-current-fund-revenue-to-total-current-fund-expenditures and total-revenue-and-other-to-total-expenses-and-other were also favorable, with an increase in the first 4 years. The decrease in 1993 in both ratios indicated that expenditures were growing faster than revenues.

Allocation Ratios

Instruction and operation and maintenance showed slightly decreasing trends. This was unfavorable. Increasing trends are indicated in research, institutional support, data processing, and scholarships and fellowships. The trends in public service, academic support, and student services were difficult to determine. The ratios in 1993 showed a slight favorable increase for all three categories.

Overall, sources of revenue, except for government appropriations, showed appropriate increases in the final year of the study. If these increases continued, NWOSU should have had sufficient revenues to support the corresponding increases needed in instruction, public service, academic support, student services, and operation and maintenance.

Net Operating

Overall, the net operating ratios were strong, with favorable trends. The current year's operations were in balance in most years; net-educational-and-general-revenue-to-total-educational-and-general-revenue was good; and tuition-and-fees-to-total-expenditures showed a favorable increasing trend. The reasonably constant current-fund-balances-to-total-current-expenditures was as expected.

Financial Reserves

This ratio indicated an unfavorable trend. With no endowment income, this institution could survive only 2 to 3 months on its current financial reserves if a decline in enrollment should occur.

Cause-and-Effect Ratios

The following were indicated by the analysis of the cause-and-effect ratios:

1. The current ratio declined. This decline reflected a tightening of working capital, as supported by the decline in the current ratio constructed with unrestricted funds only.

2. The receivables-to-working-capital exhibited such erratic behavior that a trend was not established. This measure of liquidity indicated poor-quality working capital.

3. The increase in total-revenue-to-working-capital also showed a strain on working capital.

4. Liabilities (current and total) increased relative to fund balances, beginning in 1991. This indicated an increasing chance of financial risk.

5. The ratio long-term-liabilities-to-working-capital followed a decreasing trend from 1989 to 1992, with an increase in 1993.

6. The investment-in-plant-to-total-fund-balances moved downward. This movement explained the reduction in liquidity and net profit.

7. Total-revenue-to-total-fund-balances showed an upward trend, suggesting unsupported growth. The high ratio explained the reduction in working capital, leading to a reduction in liquidity and an increase in leverage.

8. The ratio net-revenue-to-total-revenue had a sharp decrease from 1992 to 1993. This decrease also indicated a strain on working capital.

9. Miscellaneous-assets-to-total-fund-balances showed an increasing trend. The large increase in 1993 should have been cause for concern.

Southeastern Oklahoma State University

All financial data for Southeastern Oklahoma State University are located in the appendix, Table 4. A discussion of notable ratios follows.

Liquidity

The trend indicated an unfavorable decrease in the liquidity ratios from 1989 to 1992. A slight increase in that trend was experienced in 1993. The three measures of liquidity were still considered to be within the acceptable range.

Debt Capacity

The overall debt structure indicated an unfavorable trend in all debt structure ratios except debt-to-equity. The decrease in the debt-to-equity ratio indicated a decrease in plant debt.

Contribution Ratios

All of the contribution ratios showed an unfavorable decrease over the period studied, except for miscellaneous revenue, which had a favorable increasing trend. Auxiliary enterprises were not self-supporting during the time of the study. The lack of endowment income should have been of concern, and development goals should have been established to provide for sufficient funds to allow for the development of an endowment program.

Allocation Ratios

Instruction, public service, operation and maintenance, and scholarships and fellowships showed unfavorable trends from 1989 to 1992. An increase occurred during 1993 in all of the previous categories. Favorable trends were indicated in research, public service, and academic support. Student services and institutional support had no discernable trend. The category data processing had a favorable trend during the entire time period.

Net Operating

Overall, the net operating ratios indicated unfavorable trends. Most of the ratios had only a deficit. The ratios tuition-and-fees-to-total-expenditures, net-educational-and-general-revenue-to-total-educational-and-general-revenue, and net-auxiliary-enterprise-revenue-to-total-auxiliary-enterprise-expenditures had erratic trends. Current-fund-balances-to-total-current-expenditures had a decreasing trend.

Financial Reserves

This ratio indicated an unfavorable trend. With no endowment income, this institution could barely survive 1 month with a decline in enrollment.

Cause-and-Effect Ratios

The following were indicated by the analysis of the cause-and-effect ratios:

1. The current ratio declined. This decline supported a decline in working capital.

2. The receivables-to-working-capital had a favorable trend. This indicated that the liquidity might be improving.

3. The increase in total-revenue-to-working-capital indicated a strain on working capital.

4. Liabilities (current and total) decreased slightly, relative to fund balances, after an increase from 1991 to 1992. This indicated a greater chance of financial risk.

5. The ratio long-term-liabilities-to-working-capital showed an increasing trend. This indicated a greater chance of financial risk.

6. The investment-in-plant-to-total-fund-balances had an increasing trend. This trend explained the increase in leverage ratios.

7. Total-revenue-to-total-fund-balances showed an upward trend, suggesting unsupported growth. The high ratio (approaching 100%) explained the reduction in working capital, leading to reduced liquidity and an increase in leverage.

8. The ratio net-revenue-to-total-revenue had a decreasing trend. This was unfavorable, but the fact that it was low indicated the need to increase enrollment.

9. Miscellaneous-assets-to-total-fund-balances showed a flat trend.

Southwestern Oklahoma State University

All financial data for Southwestern Oklahoma State University are located in the appendix, Table 5. A discussion of notable ratios follows.

Liquidity

The trend indicated a decrease in overall liquidity. This was unfavorable. The three measures of liquidity were still considered to be within the acceptable range.

Debt Capacity

The overall debt structure was favorable. The trend showed no debt-to-equity or debt service, and both current and total funds restricted-income-to-total-income were basically flat in trend.

Contribution Ratios

All contribution ratios had questionable trends, except for the ratio auxiliary-enterprise-revenue-to-auxiliary-enterprise-expenditures. This ratio showed an increasing favorable trend, but was not self-supporting until 1993.

The lack of endowment income until 1993 was of concern, and development goals should have been established to provide for sufficient funds to allow an endowment program to be continued after 1993. The trend of total-current-fund-revenue-to-total-current-fund-expense was also favorable, with an increasing trend.

Allocation Ratios

Instruction, research, and operation and maintenance showed slight unfavorable decreasing trends for 1989 through 1992. In 1993 a reverse in that unfavorable trend occurred. Increasing trends were indicated in public service, academic support, institutional support, and data processing. These were favorable trends. Scholarships and fellowships had a fluctuating trend.

Net Operating

Overall, the net operating ratios showed no real trends. Many of the ratios had deficits during the time period studied. The trends indicated an increased dependence on restricted funds.

Financial Reserves

This ratio indicated an unfavorable trend. With endowment income in only 1993, this institution could survive only 2 to 3 months with a decline in enrollment.

Cause-and-Effect Ratios

The following were indicated by the analysis of the cause-and-effect ratios:

1. The current ratio declined. This decline reflected a strain on working capital.

2. The receivables-to-working-capital decreased. This decline did not support a decline in working capital.

3. The increase in total-revenue-to-working-capital also showed a strain on working capital.

4. Liabilities (current and total) were the same. This indicated no use of long-term debt financing.

5. The ratio long-term-liabilities-to-working-capital was not an applicable ratio, considering the lack of long-term liabilities. There was no long-term financial risk.

6. The investment-in-plant-to-total-fund-balances moved downward. The decrease possibly explained the reduction in liquidity and net profit.

7. Total-revenue-to-total-fund-balances showed an upward trend, suggesting unsupported growth. The high ratio explained the reduction in working capital, leading to reduced liquidity and an increase in leverage.

8. The ratio net-revenue-to-total-revenue did not have a clear trend, but the fact that it was low indicated the need to increase enrollment.

9. Miscellaneous-assets-to-total-fund-balances showed an increasing trend.

University of Central Oklahoma

All financial data for the University of Central Oklahoma are located in the appendix, Table 6. A discussion of notable ratios follows.

Liquidity

The trend indicated a decrease in all liquidity ratios. This was an unfavorable trend. The three measures of liquidity were still considered to be within the acceptable range.

Debt Capacity

The trend showed an unfavorable increase in the debt-to-equity ratio. This ratio showed a slight increase, possibly indicating an increase in physical plant. The unfavorable increase in restricted-income-to-total-income indicated an increase in dependence on restricted income.

Contribution Ratios

Government support from all sources, federal and state, decreased slightly, as did support from miscellaneous revenue sources. Support from miscellaneous revenue sources should have been small because these are not regular sources of income. The declining trend in the ratio auxiliary-enterprise-revenue-to-auxiliary-enterprise-expenditures from 1989 to 1991 may not have been a concern if the increase from 1992 to 1993 continued.

The increase in gifts-and-private-grants-to-educational-and-general-expenditures was a favorable trend. The lack of endowment income before 1993 should have been

of concern, and the development goals established in 1993 should have been continued to provide for sufficient funds to continue the endowment program. The trend of total-current-fund-revenue-to-total-current-fund-expense was also favorable, with an increasing trend.

Allocation Ratios

Instruction, research, institutional support, and operation and maintenance showed decreasing unfavorable trends. Increasing trends were indicated in public service, academic support, student services, data processing, and scholarships and fellowships.

Overall, sources of revenue showed slight increases in the final year of the study. If these increases continued, UCO should have had sufficient revenues to support the corresponding increases needed in instruction, research, institutional support, and operation and maintenance.

Net Operating

Overall, the net operating ratios had no concrete trends. Few deficits were shown during the study time period. Auxiliary enterprises showed a questionable ability to be self-supporting.

Financial Reserves

This ratio indicated an unfavorable trend. Even with the addition of endowment income in 1993, this institution could survive only 1 to 2 months if a decline in enrollment were to occur.

Cause-and-Effect Ratios

The following were indicated by the analysis of the cause-and-effect ratios:

1. The current ratio showed a variable trend, except for a large increase in 1993.

2. The receivables-to-working-capital had a favorable decline in 1993.

3. The increase in total-revenue-to-working-capital until 1992 indicated a strain on working capital. There was a major decline in this ratio in 1993.

4. Liabilities (current and total) increased relative to fund balances. This indicated a greater chance of financial risk.

5. The ratio long-term-liabilities-to-working-capital had a favorable decreasing trend until 1993. This decrease indicated the lessening of the strain on working capital.

6. The investment-in-plant-to-total-fund-balances presented no discernable trend that explained the reduction in liquidity and erratic behavior of the net-profit-to-fund-balances. The ratio was high and indicated an over-investment in physical plant.

7. Total-revenue-to-total-fund-balances showed an upward trend, suggesting unsupported growth. The high ratio (approaching 100%) may explain the reduction in working capital, leading to reduced liquidity and an increase in leverage.

8. The ratio net-revenue-to-total-revenue did not have a clear trend, but the fact that it was low indicated the need to increase enrollment.

9. Miscellaneous-assets-to-total-fund-balances showed an increasing trend.

Interinstitutional and Industry Comparison—1993

All financial data for the Interinstitutional and Industry Comparison are located in the appendix, Table 7. A discussion of notable ratios follows.

Liquidity

Of the six institutions in the study, Northwestern Oklahoma had the highest liquidity. The liquidity ratios of all the institutions with the exception of Northeastern were within the acceptable range. No national norms were available for liquidity.

Debt Structure

Central had the highest debt-to-equity ratio. This suggested an increase in investment in physical plant funded by debt financing. East Central had the highest restricted-income-to-total-income, considering both current and total funds. This suggested a high dependency on restricted funds. All the other universities had a debt structure in line with suggested parameters. No national norms were available for debt position.

Contribution Ratios as a Percent of Educational and General Expenditures

Southwestern received the largest government appropriations (59.57%) in comparison to the other universities. This was above the national norm of 54.07 percent. East Central, Southeastern, and Central were below that norm, with 48.83 percent, 47.37 percent, and 52.46 percent, respectively.

Central was above the norm of 27.4 percent for tuition and fees as a contribution to revenues, with 30.83 percent. This percentage was well above the ratios for the other universities. East Central and Southeastern had the lowest ratios,

with 19.26 percent and 19.93 percent, respectively. The other three universities were below the national norm as well.

East Central was well above the national norm (19.2%) in the gifts and private grants category, with 33.25 percent. All the other institutions were also above the norm, with the exception of Southwestern and Central, with 16.62 percent and 15.63 percent, respectively.

The category of endowment income was applicable only to Southwestern (0.14%) and Central (0.16%). The national norm was 0.20 percent.

Northeastern had the heaviest reliance on miscellaneous revenue, with 4.12 percent. Southeastern was next with 3.59 percent. The ratio was well above the national norm of 2.8 percent for both universities. The other institutions had ratios below the norm, ranging from 0.92 percent to 1.99 percent.

Total current fund revenues as a percentage of total current fund expenditures for all universities with the exception of Southeastern (99.44%) was 100 percent or better. This was in line with the national norm of 100.8 percent.

All the institutions showed total revenue and other as a percentage of total expenditures and other to be within the national norm (102.5%). Northwestern was only slightly below the norm (101.48%).

The auxiliary enterprises of Southeastern were the only enterprises that were not self-supporting (97.72%). This ratio also fell below the national norm of 100 percent.

Allocation Ratios as a Percent of Educational and General Expenditures

Only two universities, Northwestern (40.96%) and Southeastern (42.86%), were below the national norm for allocations to instruction (43.9%). East Central (57.15%) was well above the national norm.

In the research category, Southeastern allocated the highest percentage, at 1.87 percent. The national norm was 1.2 percent. East Central, Southwestern, and Central were below the norm, with 0.38 percent, 0.59 percent, and 0.82 percent, respectively.

Public service ranked high only for Southeastern, with 12.48 percent, well above the norm of 2.4 percent. All the other institutions fell below the norm except for Central, with 2.89 percent.

Academic support was below the national norm (9.1%) for all universities, with the exception of Central. Central's percentage of academic support was 10.29 percent.

The national norm for student services allocation was 7.1 percent. All of the institutions were below that percentage. Central had the highest (5.95%).

Only Northwestern had a percentage for institutional support above the national norm (11.6%), with 11.95 percent. The other universities were below the norm.

Operation and maintenance allocations were within 2 percent of the national norm of 9.1 percent for all the universities. Central and Northwestern were above the norm, with 10.44 percent and 9.49 percent, respectively.

Data processing as a fairly new category of allocations did not have a national norm. Central allocated the largest percentage (3.64%) to data processing, with East Central allocating the least (0.75%).

Oklahoma regional universities showed an above-average allocation to scholarships and fellowships when compared to the national norm of 10.6 percent. Northwestern allocated the largest percentage (24.04%).

Net Operating

The net operating ratios were favorable overall for all institutions, with the exception of Southeastern. Southeastern had a deficit in three of the five ratios: net current revenue (-1.13%); net educational and general revenue (-0.31%); and net auxiliary enterprise revenue (-4.47%), all to their respective total revenue figures. Tuition and fees and current fund balances as a percentage of total current expenditures were also low for Southeastern. Of the six institutions, Southeastern appeared to be the least in balance in its current year's operations.

Financial Reserves

Southwestern and Northwestern appeared to be the universities that could best survive a decrease in enrollment based on the financial reserves ratio (16.01% and 13.05%, respectively). None of the institutions could have remained financially independent for long if enrollment had suffered a 20 percent decrease over 2 years.

CHAPTER 5

SUMMARY, DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

Summary

The financial statements used by higher education institutions to report their financial activities in accordance with Audits of College and Universities, published by the American Institute of Certified Public Accountants (AICPA), include a Balance Sheet, a Statement of Changes in Fund Balances, and a Statement of Current Funds Revenues, Expenditures, and Other Changes. Financial statement analysis separates these statements into their component parts in order to analyze the parts. The result of this analysis is to provide information from which conclusions can be drawn in order to make administrative and financial decisions.

Financial statement analysis using an established set of financial ratios can provide an early warning system that alerts administrators to deteriorating financial situations and, where appropriate, enables the administration and others to prepare adequate defenses and to become proactive. Financial ratio analysis provides indicators that certain financial policies or conditions are signaling financial distress areas, as well as highlighting particularly strong financial areas.

Discussion

The goals of higher education institutions are efficient management of the resources committed to them and the accomplishment of educational objectives. These institutions often operate on a narrow margin between their expenditures and revenues. The difference between revenues and expenses, or their net profitability, is the amount upon which many institutions base their reserve fund targets. Ratio analysis helps address four fundamental concerns about higher education institutions: (a) financial condition as of the balance sheet date; (b) the financial condition of the institution at the end of the fiscal year versus that at the beginning; (c) whether the institution stayed within its budget during the fiscal year; and (d) the policies and practices the administration should continue and/or change to improve financial condition. Higher education administrators charged with the responsibility for maintaining the financial condition of their institutions need to know such critical information in order to avoid potential financial distress areas. Financial ratio analysis involves the study of the total financial position of an institution. By basing conclusions on a thorough understanding of each ratio, recommendations can be made and positive actions taken.

Ratio analysis alone cannot provide a total understanding of all the forces affecting an institution as complex as a higher education institution. Financial policies change with the legal, political, and economic environments within which a higher education institution operates. Financial statement analysis can provide a basis for systematic judgments pertaining to those financial policies.

Conclusions

The use of financial ratio analysis has merit for the administrator concerned about the financial condition of a higher education institution. A number of concerns were raised during this study. They are as follows:

1. Financial difficulties arise gradually, making potential difficulties less apparent.

2. The possibility of time may become a factor with trend analysis.

3. The selection of a sample that is sufficiently homogeneous can allow for interinstitutional comparisons.

4. Actual reporting practices and individual institution decisions concerning classification of expenditures have become and remain a problem.

5. Classification of revenues and expenditures is not uniform among institutions.

6. Institutions may allocate and shift funds from one fund balance to another without sufficient documentation.

7. A limited number of useable and understandable national norms are available to assess financial condition.

Taking into consideration the above concerns, this study identified a meaningful set of financial ratios that, when grouped together, summarize the financial condition of a higher education institution. This set of financial ratios used for analysis is important because improved understanding of higher education institution performance reduces risk in decision making. As a result of focusing on a selected set of financial ratios,

financial reporting should be more understandable and relevant. This should lead to improved decision making. These ratios helped to analyze the financial solvency and viability of the six sister higher education institutions under the authority of the Board of Regents of Oklahoma Colleges over time and relative to each other as peer institutions. The ratios focused on the ability of the institutions to meet current and future financial requirements.

Analysis of the financial ratios for the six Oklahoma institutions indicated the areas of concern were activity, profitability, and liquidity. The "activity factor" seemed to have been a problem, as some of the revenues were not used efficiently. The "profitability factor" could have been corrected if grants, contracts, and endowments had generated more funds. The "liquidity factor" was crucial, as these institutions could not have lasted for more than 2 months on the available unrestricted funds and low or nonexistent endowment funds. Each of the institutions studied will have to become more accountable for the use of revenues and strive to increase revenue-generating activities that would allow more funds to be transferred to discretionary funds.

Implications

It is well recognized that single ratios have value only when compared relative to something. Three types of analysis are possible: trend analysis within each institution, comparison of actual ratios to budgeted ratios or national norms, and interinstitutional comparisons. The set of financial ratios identified in this study provides a means to study a single institution of higher education through trend analysis

and in comparison to national norms. It also works well with a sample of homogeneous institutions for interinstitutional comparison. The techniques discussed in this study are intended to provide a general profile of an institution's financial condition. The results obtained from national norm and benchmark comparisons are a good starting point for analysis, but are not a conclusion.

This study attempted to bring the cause-and-effect ratio analysis technique from the business world into the higher education arena. Cause-and-effect ratio analysis has been proposed as another technique to aid administrators of higher education institutions in determining changes in the financial statements and what may have caused them.

To apply the technique, 10 points must be remembered.

1. Ignore isolated figures; financial balance is relative.
2. Strive for decimal accuracy.
3. Compare likes; ratios of a company under study must be related to averages for the line of business in which the particular concern is engaged.
4. Relate individual averages to industry norms of the same, or nearest available, year.
5. Study any substantial deviation from normal—either high or low.
6. Avoid concentration on astronomically high percentages or spectacular variances; the significant ratios may be less sensational in appearance.
7. Remember that a ratio measures both components.

8. Recognize the seasonal factor and make appropriate allowances for it.

9. Watch for trends.

10. Be alert to compensating advantages. (D. E. Miller, 1972, p. 152)

According to D. E. Miller (1972), cause-and-effect ratio analysis serves as a foundation for sound financial decision making in the business world. Further research using this technique is necessary before such a statement can be made concerning higher education institutions.

The differences in accounting practices among higher education institutions suggest uncertainty in making valid interinstitutional comparisons. This should not eliminate such comparisons. They are useful as benchmarks. The increased use of standardized financial statement formats makes the process of financial ratio analysis more efficient. The existence of standardized financial databases (John Minter Associates, Inc., and Integrated Postsecondary Education Data System) and greater conformity with the Generally Accepted Accounting Principles will strengthen the reliability of comparative ratio analysis. The accounting practices of the peer institutions to be compared should be researched prior to applying financial ratio analysis in order to be certain that the ratios are comparable.

Calculating the presented set of ratios is only the first step in analyzing the financial condition of a higher education institution. Nonfinancial information such as enrollment trends, inflation, and deferred maintenance trends should also be considered.

Enrollment trends are critical to the survival of any higher education institution. A 10 percent or more decline in enrollment in institutions driven by student formula funding could terminate some college degree programs that are not paying their way as a non-profit unit. Increases in expenditures need to be examined to determine whether the increases were due to inflation or to other factors, such as program expansion or decreases in program enrollments. Deferring maintenance to reduce costs is a common practice in many institutions.

The importance of financial statement analysis should not be underestimated. The understandable format of financial ratios allows virtually any stakeholder to acquire a basic comprehension of the most critical financial policies of higher education institutions and their financial condition. This study provided useful decision making information for higher education leaders on state coordinating boards of higher education, in state legislatures, and in public higher education institutions in America.

APPENDIX

TABLES

Table 1
Financial Analysis of East Central University

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Liquidity (Unrestricted)	**Current Ratio**	5.078	4.039	3.364	2.700	3.245	—
	Quick Ratio	4.459	3.970	3.063	2.454	3.048	—
	Available Funds	4.201	3.075	2.867	2.356	2.949	—
Debt structure	**Debt to Equity**	8.50%	6.88%	NA	NA	6.17%	+
	Debt Service	.38%	.32%	.16%	NA	NA	+
	Restricted Income to Total Income (Current Funds)	20.54%	21.12%	21.54%	24.13%	28.08%	—
	Restricted Income to Total Income (Total Funds)	42.59%	39.23%	34.75%	6.86%	30.95%	+
Contribution ratios	**Government Appropriations**	53.43%	53.37%	55.79%	53.08%	48.83%	—
(to Total Expenses)	**Tuition and Fees**	18.99%	20.36%	17.46%	20.94%	19.26%	?
	Gifts and Private Grants	24.45%	25.21%	26.16%	29.41%	33.25%	+
	Endowment Income	NA	NA	NA	NA	NA	
	Miscellaneous Revenue	1.92%	2.07%	1.64%	1.31%	.92%	—
	Total Current Fund Revenue to Total Current Fund Expenses	97.41%	98.22%	100.39%	103.22%	104.13%	+
	Total Revenue and Other to Total Expenses and Other	100.86%	108.30%	111.12%	100.91%	103.32%	?
	AE Revenue to AE Expenses	91.18%	89.87%	97.23%	94.79%	117.76%	—
Allocation ratios	**Instruction**	50.09%	50.33%	49.08%	43.02%	57.15%	—
	Research	.12%	.01%	.01%	.50%	.38%	?
	Public Service	1.42%	1.24%	1.06%	.50%	.84%	—
	Academic Support	4.02%	3.66%	3.82%	4.70%	5.15%	+
	Student Services	NA	NA	2.60%	2.67%	2.25%	—
	Institutional Support	8.75%	8.40%	8.30%	7.93%	7.43%	—
	Operation and Maintenance	9.24%	9.16%	8.26%	8.09%	7.50%	—
	Data Processing	.48%	.55%	.73%	.76%	.75%	+
	Scholarship and Fellowship	16.76%	17.69%	16.19%	18.06%	18.56%	+

(table continues)

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Net operating (Current Funds)	**Net Current Revenue to Total Current Revenue**	-2.54%	-2.08%	-2.92%	1.09%	4.59%	+
	Net E&G Revenue to Total E&G Revenue	-.63%	.02%	5.01%	3.35%	4.20%	+
	Net AE Revenue to Total AE Revenue	-9.67%	11.28%	2.84%	5.49%	15.08%	+
	Tuition and Fees to Total Expenses	18.99%	20.36%	17.46%	20.94%	19.26%	?
	Current Fund Balances to Total Current Expenses	13.78%	10.46%	10.78%	10.79%	14.86%	+
Effect ratios (Liquidity)	**Current Ratio** (Restricted and Unrestricted)	5.965	5.279	4.192	3.817	4.153	—
	Receivables to Net Working Capital	3.14%	5.70%	9.64%	7.81%	10.68%	—
	Total Revenue to Net Working Capital	382.29%	387.25%	588.15%	459.60%	495.49%	—
(Leverage)	**Current Liabilities to Total Fund Balances**	5.13%	5.57%	4.54%	5.16%	11.43%	—
	Total Liabilities to Total Fund Balances	13.63%	12.45%	4.74%	5.16%	17.60%	—
	Long-term Liabilities to Net Working Capital	33.35%	28.84%	1.35%	NA	17.12%	+
	Total Revenue to Investment in Plant	119.08%	112.52%	98.27%	78.24%	254.48%	—
Cause ratios	**Investment in Plant to Total Fund Balances**	81.79%	82.06%	86.79%	85.45%	70.14%	+
	Total Revenue to Total Fund Balances	97.40%	92.34%	85.29%	66.86%	178.50%	—
	Net Revenue to Total Revenue	.85%	7.67%	10.01%	.90%	3.21%	?
	Miscellaneous Assets to Total Fund Balances	5.39%	4.50%	3.41%	3.47%	6.20%	+
Financial reserves		8.27%	6.28%	6.47%	6.47%	8.92%	+

Note. *Trend refers to whether the change over time is favorable (+) or unfavorable (-) and not to the direction of the change (Source: Chabotar, 1989).

Table 2
Financial Analysis of Northeastern State University

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Liquidity (Unrestricted)	**Current Ratio**	3.11	2.16	1.43	1.45	1.93	—
	Quick Ratio	2.53	1.72	1.04	1.16	1.65	—
	Available Funds	2.13	1.59	.76	.98	1.45	+
Debt structure	**Debt to Equity**	2.24%	1.94%	1.07%	1.52%	1.21%	—
	Debt Service	.15%	.12%	.09%	.08%	.00%	+
	Restricted Income to Total Income (Current Funds)	22.82%	22.1%	22.61%	22.83%	17.74%	+
	Restricted Income to Total Income (Total Funds)	23.85%	23.76%	24.89%	24.36%	22.68%	+
Contribution ratios	**Government Appropriations**	51.24%	52.54%	52.50%	53.34%	54.59%	+
(to Total Expenses)	**Tuition and Fees**	20.67%	21.20%	20.09%	20.87%	22.32%	?
	Gifts and Private Grants	22.08%	21.63%	22.08%	22.83%	22.97%	+
	Endowment Income	NA	NA	NA	NA	NA	
	Miscellaneous Revenue	2.75%	2.52%	2.99%	2.94%	4.12%	+
	Total Current Fund Revenue to Total Current Fund Expenses	96.73%	97.89%	97.65%	99.98%	103.43%	+
	Total Revenue and Other to Total Expenses and Other	96.22%	102.25%	102.78%	95.57%	108.29%	+
	AE Revenue to AE Expenses	91.77%	97.96%	93.57%	110.35%	101.17%	+
Allocation ratios	**Instruction**	48.66%	49.58%	42.81%	42.59%	43.53%	—
	Research	1.44%	2.24%	2.03%	1.64%	1.79%	?
	Public Service	2.77%	2.39%	1.32%	1.62%	1.08%	—
	Academic Support	4.63%	4.69%	9.13%	10.26%	8.25%	+
	Student Services	3.74%	3.93%	4.53%	4.43%	4.56%	+
	Institutional Support	5.38%	5.37%	8.81%	7.86%	8.00%	+
	Operation and Maintenance	11.13%	10.48%	8.30%	8.45%	8.12%	—
	Data Processing	.83%	1.03%	1.16%	1.13%	2.86%	+
	Scholarship and Fellowship	21.03%	19.83%	21.51%	22.02%	21.81%	+

(table continues)

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Net operating (Current Funds)	**Net Current Revenue to Total Current Revenue**	-5.14%	-1.84%	-2.43%	1.68%	3.26%	+
	Net E&G Revenue to Total E&G Revenue	-5.28%	-3.24%	-3.11%	-.03%	4.97%	+
	Net AE Revenue to Total AE Revenue	-8.97%	-2.08%	-6.88%	9.38%	1.26%	+
	Tuition and Fees to Total Expenses	15.59%	16.60%	15.76%	17.055	22.00%	+
	Current Fund Balances to Total Current Expenses	11.63%	7.86%	4.77%	6.36%	9.56%	+
Effect ratios (Liquidity)	**Current Ratio** (Restricted and Unrestricted)	7.34	5.14	3.87	3.73	3.44	—
	Receivables to Working Capital	9.16%	8.01%	17.39%	12.49%	17.68%	?
	Total Revenue to Working Capital	389.41%	489.90%	607.09%	532.85%	611.33%	—
(Leverage)	**Current Liabilities to Total Fund Balances**	3.05%	4.00%	3.24%	6.68%	6.23%	—
	Total Liabilities to Total Fund Balances	5.29%	4.01%	4.31%	8.21%	7.44%	—
	Long-term Liabilities to Working Capital	.29%	.05%	11.54%	8.35%	7.98%	+
	Total Revenue to Investment in Plant	91.94%	95.09%	99.17%	116.62%	116.93%	+
Cause ratios	**Investment in Plant to Total Fund Balances**	81.89%	85.37%	56.85%	83.29%	79.33%	—
	Total Revenue to Total Fund Balances	75.29%	81.18%	56.37	97.13%	92.76%	+
	Net Revenue to Total Revenue	-3.93%	2.20%	2.70%	-4.64%	7.66%	?
	Miscellaneous Assets to Total Fund Balances	5.93%	4.75%	2.77%	5.76%	6.28%	—
Financial reserves		6.98%	4.72%	2.86%	3.82%	5.74%	+

Note. *Trend refers to whether the change over time is favorable (+) or unfavorable (-) and not to the direction of the change (Source: Chabotar, 1989).

Table 3
Financial Analysis of Northwestern Oklahoma State University

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Liquidity (Unrestricted)	**Current Ratio**	10.58	10.40	6.34	4.97	4.52	—
	Quick Ratio	9.78	9.59	5.89	4.67	4.29	—
	Available Funds	9.50	9.45	3.33	4.52	4.26	—
Debt structure	**Debt to Equity**	.91%	.81%	.73%	.64%	1.08%	+
	Debt Service	.10%	.09%	.07%	.06%	.05%	+
	Restricted Income to Total Income (Current Funds)	16.14%	16.30%	16.22%	15.61%	16.68%	+
	Restricted Income to Total Income (Total Funds)	28.28%	25.88%	25.10%	23.27%	22.97%	+
Contribution ratios	**Government Appropriations**	56.31%	53.40%	56.03%	55.48%	54.09%	—
(to Total Expenses)	**Tuition and Fees**	21.01%	22.03%	23.32%	24.38%	25.98%	+
	Gifts and Private Grants	18.55%	18.47%	19.28%	19.53%	20.33%	+
	Endowment Income	NA	NA	NA	NA	NA	
	Miscellaneous Revenue	.97%	1.94%	2.14%	2.74%	1.99%	+
	Total Current Fund Revenue to Total Current Fund Expenses	114.91%	113.28%	118.86%	125.14%	102.23%	+
	Total Revenue and Other to Total Expenses and Other	104.25%	104.86%	105.06%	107.89%	101.48%	+
	AE Revenue to AE Expenses	99.42%	104.69%	95.97%	112.65%	101.43%	?
Allocation ratios	**Instruction**	50.33%	46.83%	43.62%	42.23%	40.96%	—
	Research	.88%	.80%	.30%	.78%	1.48%	+
	Public Service	1.01%	1.60%	1.53%	1.34%	1.64%	?
	Academic Support	4.69%	3.45%	4.60%	4.23%	4.37%	?
	Student Services	5.17%	5.02%	29.11%	5.12%	5.26%	?
	Institutional Support	5.75%	6.14%	11.64%	11.61%	11.95%	+
	Operation and Maintenance	12.06%	10.54%	9.38%	9.29%	9.49%	—
	Data Processing	.62%	.92%	1.35%	1.39%	1.56%	+
	Scholarship and Fellowship	19.50%	21.11%	NA	5.82%	24.04%	+

(table continues)

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Net operating (Current Funds)	**Net Current Revenue to Total Current Revenue**	-1.31%	.15%	1.35%	3.69%	2.27%	+
	Net E&G Revenue to Total E&G Revenue	-1.88%	-.76%	2.47%	2.56%	2.68%	+
	Net AE Revenue to Total AE Revenue	-.58%	4.48%	-4.20%	11.23%	1.32%	?
	Tuition and Fees to Total Expenses	17.77%	18.89%	19.62%	20.24%	28.73%	+
	Current Fund Balances to Total Current Expenses	20.61%	17.85%	18.10%	20.23%	21.75%	+
Effect ratios (Liquidity)	**Current Ratio** (Restricted and Unrestricted)	16.49	16.96	10.26	7.65	5.40	—
	Receivables to Working Capital	7.35%	28.74%	.71%	6.32%	1.19%	?
	Total Revenue to Working Capital	258.23%	284.33%	315.86%	323.75%	391.19%	—
(Leverage)	**Current Liabilities to Total Fund Balances**	1.08%	1.04%	1.70%	2.51%	6.14%	—
	Total Liabilities to Total Fund Balances	2.00%	1.85%	2.43%	3.14%	7.22%	—
	Long-term Liabilities to Working Capital	5.42%	4.92%	4.62%	3.83%	4.00%	+
	Total Revenue to Investment in Plant	50.69%	55.72%	58.65%	64.33%	158.52%	+
Cause ratios	**Investment in Plant to Total Fund Balances**	85.60%	84.29%	84.95%	83.87%	66.60%	+
	Total Revenue to Total Fund Balances	43.39%	46.97%	49.83%	53.95%	105.57%	—
	Net Revenue to Total Revenue	4.07%	4.64%	4.81%	7.32%	1.46%	+
	Miscellaneous Assets to Total Fund Balances	1.04%	.79%	.87%	1.12%	15.61%	—
Financial reserves		12.37%	10.71%	10.86%	12.14%	13.05%	+

Note. *Trend refers to whether the change over time is favorable (+) or unfavorable (-) and not to the direction of the change (Source: Chabotar, 1989).

Table 4
Financial Analysis of Southeastern Oklahoma State University

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Liquidity (Unrestricted)	**Current Ratio**	3.66	2.97	2.52	1.75	2.25	—
	Quick Ratio	3.40	2.80	2.37	1.62	2.06	—
	Available Funds	3.26	2.61	2.17	1.51	2.03	—
Debt Structure	**Debt to Equity**	4.54%	4.29%	4.17%	4.11%	3.80%	+
	Debt Service	.15%	.15%	.15%	.16%	.20%	Flat
	Restricted Income to Total Income (Current Funds)	24.78%	23.74%	22.17%	22.69%	24.28%	—
	Restricted Income to Total Income (Total Funds)	39.47%	28.45%	26.66%	28.85%	28.81%	—
Contribution ratios	**Government Appropriations**	50.32%	49.46%	52.37%	48.27%	47.37%	—
(to Total Expenses)	**Tuition and Fees**	17.87%	20.07%	20.02%	20.29%	19.93%	Flat
	Gifts and Private Grants	29.93%	28.67%	27.54%	26.65%	24.53%	—
	Endowment Income	NA	NA	NA	NA	NA	
	Miscellaneous Revenue	2.22%	1.97%	2.08%	2.97%	3.59%	+
	Total Current Fund Revenue to Total Current Fund Expenses	120.77%	120.76%	124.21%	117.49%	99.44%	—
	Total Revenue and Other to Total Expenses. and Other	111.32%	103.16%	104.65%	103.91%	102.48%	—
	AE Revenue to AE Expenses	90.58%	108.03%	98.69%	92.26%	97.72%	—
Allocation ratios	**Instruction**	46.79%	47.66%	43.58%	43.30%	42.86%	—
	Research	.22%	.34%	.56%	.42%	1.87%	+
	Public Service	1.30%	1.34%	1.14%	1.46%	12.48%	+
	Academic Support	2.62%	3.30%	3.34%	4.25%	4.87%	+
	Student Services	3.46%	4.76%	3.42%	8.23%	3.33%	?
	Institutional Support	4.95%	3.26%	9.21%	2.91%	8.42%	?
	Operation and Maintenance	9.01%	8.41%	7.14%	6.83%	7.04%	—
	Data Processing	NA	.33%	1.94%	1.69%	1.70%	+
	Scholarship and Fellowship	31.66%	30.62%	29.66%	30.91%	17.38%	—

(table continues)

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Net operating (Current Funds)	**Net Current Revenue to Total Current Revenue**	-1.49%	1.41%	1.37%	-2.92%	-1.13%	—
	Net E&G Revenue to Total E&G Revenue	.16%	-47%	2.69%	-.75%	-.31%	—
	Net AE Revenue to Total AE Revenue	-.34%	7.51%	-1.33%	-8.39%	-4.47%	—
	Tuition and Fees to Total Expenses	14.58%	16.86%	16.34%	16.78%	21.96%	—
	Current Fund Balances to Total Current Expenses	12.73%	9.24%	11.27%	8.57%	7.21%	—
Effect ratios (Liquidity)	**Current Ratio** (Restricted and Unrestricted)	6.48	4.31	3.51	2.98	3.33	—
	Receivables to Working Capital	3.41%	7.27%	11.83%	9.76%	5.80%	+
	Total Revenue to Working Capital	431.21%	447.21%	489.89%	576.67%	661.48%	—
(Leverage)	**Current Liabilities to Total Fund Balances**	3.96%	5.91%	7.17%	8.32%	6.27%	—
	Total Liabilities to Total Fund Balances	8.50%	10.20%	11.34%	12.44%	10.07%	—
	Long-term Liabilities to Working Capital	20.95%	21.96%	23.15%	24.92%	26.08%	—
	Total Revenue to Investment in Plant	112.48%	100.90%	102.45%	109.30%	108.05%	+
Cause ratios	**Investment in Plant to Total Fund Balances**	83.07%	86.60%	86.15%	87.59%	89.23%	—
	Total Revenue to Total Fund Balances	93.43%	87.38%	88.26%	95.74%	96.41%	—
	Net Revenue to Total Revenue	10.17%	3.06%	4.45%	3.77%	2.42%	+
	Miscellaneous Assets to Total Fund Balances	7.73%	6.33%	6.67%	7.20%	6.64%	Flat
Financial reserves		7.64%	5.54%	6.76%	5.14%	4.33%	—

Note. *Trend refers to whether the change over time is favorable (+) or unfavorable (-) and not to the direction of the change (Source: Chabotar, 1989).

Table 5
Financial Analysis of Southwestern Oklahoma State University

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Liquidity (Unrestricted)	**Current Ratio**	9.35	9.91	4.81	2.64	3.02	—
	Quick Ratio	8.43	9.28	4.79	2.62	3.01	—
	Available Funds	8.16	8.91	4.48	2.57	2.96	—
Debt structure	**Debt to Equity**	NA	NA	NA	NA	NA	
	Debt Service	NA	NA	NA	NA	NA	
	Restricted Income to Total Income (Current Funds)	13.22%	14.08%	12.59%	13.49%	13.49%	Flat
	Restricted Income to Total Income (Total Funds)	21.16%	20.67%	19.58%	20.18%	20.21%	Flat
Contribution ratios	**Government Appropriations**	59.05%	58.70%	59.64%	50.28%	59.57%	Flat
(to Total Expenses)	**Tuition and Fees**	22.97%	25.18%	23.61%	20.31%	25.12%	?
	Gifts and Private Grants	15.85%	16.97%	15.24%	12.50%	16.62%	?
	Endowment Income	NA	NA	NA	NA	.14%	+
	Miscellaneous Revenue	1.63%	1.23%	2.35%	2.07%	1.21%	—
	Total Current Fund Revenue to Total Current Fund Expenses	98.52%	101.57%	98.56%	86.03%	103.40%	?
	Total Revenue and Other to Total Expenses and Other	102.36%	105.57%	102.17%	102.17%	105.22%	?
	AE Revenue to AE Expenses	93.96%	98.86%	88.58%	92.29%	108.35%	+
Allocation ratios	**Instruction**	60.81%	60.12%	56.51%	46.98%	53.19%	—
	Research	.79%	1.15%	.66%	.56%	.59%	—
	Public Service	.32%	.86%	1.03%	.78%	1.04%	+
	Academic Support	3.99%	3.82%	6.47%	5.44%	8.03%	+
	Student Services	3.86%	3.43%	3.34%	3.13%	3.76%	Flat
	Institutional Support	3.76%	4.28%	6.26%	6.44%	6.09%	+
	Operation and Maintenance	10.17%	9.21%	7.95%	7.33%	7.69%	—
	Data Processing	NA	NA	1.17%	1.06%	1.18%	+
	Scholarship and Fellowship	16.31%	17.14%	16.40%	14.21%	18.43%	?

(table continues)

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Net operating (Current Funds)	**Net Current Revenue to Total Current Revenue**	-1.48%	12.83%	-1.47%	-1.60%	3.33%	?
	Net E&G Revenue to Total E&G Revenue	-.59%	2.44%	.98%	-.78%	3.06%	?
	Net AE Revenue to Total AE Revenue	-6.42%	70.70%	84.34%	-7.90%	7.71%	—
	Tuition and Fees to Total Expenses	18.88%	21.23%	19.22%	17.80%	27.96%	+
	Current Fund Balances to Total Current Expenses	21.26%	32.60%	26.05%	31.13%	26.60%	?
Effect ratios (Liquidity)	**Current Ratio** (Restricted and Unrestricted)	14.48	10.84	5.24	3.18	3.71	—
	Receivables to Working Capital	2.29%	3.79%	7.11%	4.11%	2.74%	+
	Total Revenue to Working Capital	286.64%	300.74%	361.60%	390.30%	363.34%	—
(Leverage)	**Current Liabilities to Total Fund Balances**	1.50%	2.06%	4.33%	14.20%	12.13%	—
	Total Liabilities to Total Fund Balances	1.50%	2.06%	4.33%	14.20%	12.13%	—
	Long-term Liabilities to Working Capital	NA	NA	NA	NA	NA	
	Total Revenue to Investment in Plant	72.63%	76.77%	81.24%	174.99%	177.98%	+
Cause ratios	**Investment in Plant to Total Fund Balances**	79.59%	79.50%	81.65%	69.04%	67.12%	+
	Total Revenue to Total Fund Balances	57.80%	61.03%	66.34%	120.82%	119.46%	—
	Net Revenue to Total Revenue	2.31%	5.28%	2.12%	2.12%	4.96%	—
	Miscellaneous Assets to Total Fund Balances	.25%	.20%	.16%	3.77%	4.82%	—
Financial reserves		12.76%	19.56%	15.63%	18.68%	16.01%	?

Note. *Trend refers to whether the change over time is favorable (+) or unfavorable (-) and not to the direction of the change (Source: Chabotar, 1989).

Table 6
Financial Analysis of the University of Central Oklahoma

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Liquidity (Unrestricted)	**Current Ratio**	3.28	4.12	3.00	2.47	2.21	—
	Quick Ratio	2.89	3.68	2.71	2.26	2.01	—
	Available Funds	2.70	3.38	2.57	2.17	1.92	—
Debt structure	**Debt to Equity**	4.94%	4.41%	2.89%	2.66%	44.98%	—
	Debt Service	.21%	.18%	.10%	NA	NA	+
	Restricted Income to Total Income (Current Funds)	10.70%	11.04%	11.60%	11.46%	13.31%	—
	Restricted Income to Total Income (Total Funds)	25.30%	20.40%	22.12%	15.62%	20.62%	?
Contribution ratios	**Government Appropriations**	55.38%	56.76%	57.74%	58.44%	52.46%	+
(to Total Expenses)	**Tuition and Fees**	27.15%	30.52%	29.30%	32.23%	30.83%	?
	Gifts and Private Grants	12.54%	13.33%	13.82%	14.07%	15.63%	+
	Endowment Income	NA	NA	NA	NA	.16%	+
	Miscellaneous Revenue	1.57%	1.82%	1.23%	1.47%	1.38%	?
	Total Current Fund Revenue to Total Current Fund Expenses	98.75%	102.86%	101.51%	105.78%	100.83%	+
	Total Revenue and Other to Total Expenses and Other	104.18%	104.75%	101.85%	108.47%	107.29%	+
	AE Revenue to AE Expenses	109.97%	105.28%	99.73%	103.23%	102.97%	+
Allocation ratios	**Instruction**	54.24%	53.85%	46.36%	46.22%	44.61%	—
	Research	1.04%	1.20%	.77%	.73%	.82%	—
	Public Service	2.98%	3.62%	2.63%	2.80%	2.89%	+
	Academic Support	5.13%	4.68%	8.80%	10.74%	10.29%	+
	Student Services	4.11%	4.40%	4.14%	6.21%	5.95%	+
	Institutional Support	3.60%	5.02%	9.19%	7.88%	7.29%	—
	Operation and Maintenance	13.76%	11.56%	10.23%	9.47%	10.44%	—
	Data Processing	2.07%	1.61%	3.29%	3.11%	3.64%	+
	Scholarship and Fellowship	13.06%	14.07%	14.60%	12.83%	14.08%	+

(table continues)

Measure	Ratio	1989	1990	1991	1992	1993	Trend*
Net operating (Current Funds)	**Net Current Revenue to Total Current Revenue**	-1.04%	2.65%	.59%	2.88%	.46%	?
	Net E&G Revenue to Total E&G Revenue	-4.37%	2.17%	1.04%	3.31%	.57%	?
	Net AE Revenue to Total AE Revenue	9.07%	5.01%	-3.38%	3.13%	2.99%	?
	Tuition and Fees to Total Expenses	27.15%	30.52%	29.30%	32.23%	30.83%	+
	Current Fund Balances to Total Current Expenses	14.46%	16.51%	15.65%	17.71%	16.01%	+
Effect ratios (Liquidity)	**Current Ratio** (Restricted and Unrestricted)	6.79	7.42	5.12	3.65	8.33	—
	Receivables to Working Capital	3.96%	3.80%	3.13%	3.20%	1.29%	+
	Total Revenue to Working Capital	333.30%	325.99%	408.47%	411.89%	146.49%	—
(Leverage)	**Current Liabilities to Total Fund Balances**	4.27%	4.02%	5.54%	8.42%	9.04%	—
	Total Liabilities to Total Fund Balances	4.27%	4.03%	6.00%	8.42%	12.86%	—
	Long-term Liabilities to Working Capital	19.98%	17.05%	.55%	NA	5.76%	—
	Total Revenue to Investment in Plant	104.86%	109.55%	116.61%	118.30%	123.29%	+
Cause ratios	**Investment in Plant to Total Fund Balances**	78.59%	76.98%	78.91%	77.76%	78.73%	?
	Total Revenue to Total Fund Balances	82.41%	84.33%	91.66%	91.99%	97.06%	—
	Net Revenue to Total Revenue	4.02%	4.54%	1.82%	7.81%	6.80%	—
	Miscellaneous Assets to Total Fund Balances	1.62%	1.45%	1.53%	2.56%	4.91%	—
Financial reserves		8.68%	9.91%	9.39%	10.63%	9.67%	+

Note. *Trend refers to whether the change over time is favorable (+) or unfavorable (-) and not to the direction of the change (Source: Chabotar, 1989).

Table 7

Interinstitutional and Industry Comparison—1993

Measure	Ratio	ECU	NESU	NWOSU	SEOSU	SWOSU	UCO	Industry
Liquidity (Unrestricted)	**Current Ratio**	3.25	1.93	4.52	2.25	3.02	2.21	
	Quick Ratio	3.05	1.65	4.29	2.06	3.01	2.01	
	Available Funds	2.95	1.45	4.26	2.03	2.96	1.92	
Debt structure	**Debt to Equity**	6.17%	1.21%	1.08%	3.80%	NA	44.98%	
	Debt Service	NA	.00%	.05%	.20%	NA	NA	
	Restricted Income to Total Income (Current Funds)	28.08%	17.74%	16.68%	24.28%	13.49%	13.31%	
	Restricted Income to Total Income (Total Funds)	30.95%	22.68%	22.97%	28.81%	20.21%	20.62%	
Contribution ratios	**Government Appropriations**	48.83%	54.59%	54.09%	47.37%	59.57%	52.46%	54.07%
(as a percent of E&G expenditures)	**Tuition and Fees**	19.26%	22.32%	25.98%	19.93%	25.12%	30.83%	27.4%
	Gifts and Private Grants	33.25%	22.97%	20.33%	24.53%	16.62%	15.63%	19.2%
	Endowment Income	NA	NA	NA	NA	.14%	.16%	.2%
	Miscellaneous Revenue	.92%	4.12%	1.99%	3.59%	1.21%	1.38%	2.8%
	AE Revenue to AE Expenses	117.76%	101.17%	101.43%	97.72%	108.35%	102.97%	100%
Allocation ratios	**Instruction**	57.15%	43.53%	40.96%	42.86%	53.19%	44.61%	43.9%
(as a percent of E&G expenditures)	**Research**	.38%	1.79%	1.48%	1.87%	.59%	.82%	1.2%
	Public Service	.84%	1.08%	1.64%	12.48%	1.04%	2.89%	2.4%
	Academic Support	5.15%	8.25%	4.37%	4.87%	8.03%	10.29%	9.1%
	Student Services	2.25%	4.56%	5.26%	3.33%	3.76%	5.95%	7.1%
	Institutional Support	7.43%	8.00%	11.95%	8.42%	6.09%	7.29%	11.6%
	Operation and Maintenance	7.50%	8.12%	9.49%	7.04%	7.69%	10.44%	9.1%

(table continues)

Measure	Ratio	ECU	NESU	NWOSU	SEOSU	SWOSU	UCO	Industry
	Data Processing	.75%	2.86%	1.56%	1.70%	1.18%	3.64%	
	Scholarship and Fellowship	18.56%	21.81%	24.04%	17.38%	18.43%	14.08%	10.6%
	Total Current Fund Revenue to Total Current Fund Expenses	104.13%	103.43%	102.23%	99.44%	103.40%	100.83%	100.8%
	Total Revenue and Other to Total Expenses and Other	103.32%	108.29%	101.48%	102.48 %	105.22%	107.29%	102.5%
Net operating **(Current Funds)**	**Net Current Revenue to Total Current Revenue**	4.59%	3.26%	2.27%	-1.13%	3.33%	.46%	
	Net E&G Revenue to Total E&G Revenue	4.20%	4.97%	2.68%	-.31%	3.06%	.57%	
	Net AE Revenue to Total AE Revenue	15.08%	1.26%	1.32%	-4.47%	7.71%	2.99%	
	Tuition and Fees to Total Expenses	19.26%	22.00%	28.73%	21.96%	27.96%	30.83%	
	Current Fund Balances to Total Current Expenses	14.86%	9.56%	21.75%	7.21%	26.60%	16.01%	
Financial reserves		8.92%	5.74%	13.05%	4.33%	16.14%	10.01%	

Note. ECU – East Central University; NESU – Northeastern State University; NWOSU – Northwestern Oklahoma State University; SEOSU – Southeastern Oklahoma State University; SWOSU – Southwestern Oklahoma State University; UCO – University of Central Oklahoma.

REFERENCES

AAUP Executive Committee. (1993). Report: The financial crisis in higher education. Academe, 78(7), 3.

Adams, C. H., & Palmer, D. D. (1993). Economics problems and the future of higher education. Academe, 78(7), 22-24.

Adding it up: The price-income squeeze in higher education. (1997). Change, 29(3), 45-48.

Bailey, L. P., & Miller, M. A. (1993). HBJ Miller comprehensive GAAS guide. College ed. San Diego, CA: The Dryden Press, Harcourt Brace Jovanovich.

Brand, M. (1993). The challenge to change: Reforming higher education. Educational Record, 74(4), 6-11. (ERIC Document Reproduction Service No. EJ 472 946)

Brimelow, P. (1998). The education paradox. Forbes, 162(1), 178-179.

Brubaker, P. (1979). Financial health indicators for institutions of higher learning: A literature review and synthesis (Tech. Rep. No. 13). Palo Alto, CA: American Institutes for Research in the Behavioral Sciences. (ERIC Document Reproduction Service No. ED 279 221)

Chabotar, K. J. (1989). Financial ratio analysis comes to nonprofits. Journal of Higher Education, 60(2), 188-208. (ERIC Document Reproduction Service No. EJ 389 089)

Cirtin, A., & Lightfoot, C. (1996). Financial statement analysis for private colleges and universities. The National Public Accountant, 41(8), 29-34.

Collier, D. J., & Patrick, C. (1978). A multi-variate approach to the analysis of institutional financial condition. Boulder, CO: National Center for Higher Education Management Systems.

Communicating financial data: A conversation among independent college officials. (1993). Business Officer, 27(5), 36-40. (ERIC Document Reproduction Service No. EJ 472 919)

Connell, C. (1988, May 23). Stock crash affecting major college endowments. Denton (TX) Record-Chronicle, p. 12A.

Cottle, M. (1998). Too well endowed? Washington Monthly, 30(9), 11-15.

Davis, C., & Sonnenbert, B. (Eds.). (1993). Programs and plans for the national center for education statistics. Washington, DC: National Center for Education Statistics. (ERIC Document Reproduction Service No. ED 360 389)

Dickmeyer, N. (1979). First steps in financial analysis. New Directions for Higher Education; No. 26 (Assessing Financial Health), 7(2), 41-45. (ERIC Document Reproduction Service No. EJ 208 285)

Dickmeyer, N. (1980). Concepts related to indicators of college and university financial health (Tech. Rep. No. 12). Palo Alto, CA: American Institutes for Research in the Behavioral Sciences. (ERIC Document Reproduction Service No. ED 272 053)

Dickmeyer, N. (1983). Financial conditions of colleges and universities. Washington, DC: National Association of College and University Business Officers. (ERIC Document Reproduction Service No. ED 227 753)

Dickmeyer, N., & Hughes, K. S. (1979a). Development of a workbook for the self-assessment of financial condition of small independent colleges (Tech. Rep. No. 8). Washington, DC: National Association of College and University Business Officers. (ERIC Document Reproduction Service No. ED 272 054)

Dickmeyer, N., & Hughes, K. S. (1979b). Self-assessment of financial condition. Washington, DC: National Association of College and University Business Officers.

Dickmeyer, N., & Hughes, K. S. (1982). Financial self-assessment. New Directions for Higher Education; No. 38 (Successful Responses to Financial Difficulty), 10(2), 19-24. (ERIC Document Reproduction Service No. EJ 268 455)

DiSalvio, P. (1989). Ratio analysis in higher education: Caveat emptor. Journal of Education Finance, 14, 500-512. (ERIC Document Reproduction Service No. EJ 422 784)

Duffey, J. D. (1992). What's ahead for higher education: The future isn't what it used to be. Educational Record, 73(4), 6-10. (ERIC Document Reproduction Service No. EJ 453 167)

Eastaugh, S. R. (1980). Financial ratio analysis and medical school management. Journal of Medical Education, 55(12), 983-992. (ERIC Document Reproduction Service No. EJ 236 911)

Everett, R. E. (1995). Getting beyond traditional measures of district financial health. School Business Affairs, 61(1), 50-57. (ERIC Document Reproduction Service No. EJ 499 090)

Fey, J. T., Fuller, S. H., & Payton, R. L. (1977). The corporate stake in higher education: An underdeveloped potential. New York: Council for Financial Aid to Education. (ERIC Document Reproduction Service No. ED 207 419)

Finn, D. F. (1979). Developing and applying useful financial indicators. New Directions for Higher Education; No. 26 (Assessing Financial Health), 7(2), 81-83. (ERIC Document Reproduction Service No. EJ 208 291)

Flower, R. (1998). Cost and quality of higher education. Education Digest, 64(2), 23-29.

Gomberg, I. L., & Atelsek, F. J. (1981). Trends in financial indicators of colleges and universities. American Council on Education. Washington, DC: Higher Education Panel. (ERIC Document Reproduction Service No. ED 201 256)

Jackson, S., & Hammonds, K. H. (1997, December 22). The new U: A tough market is reshaping colleges. Business Week, (3558), 96-100.

Jenny, H. H. (1979). Specifying financial indicators: Cash flows in the short and long run. New Directions for Higher Education; No. 26 (Assessing Financial Health), 7(2), 15-26. (ERIC Document Reproduction Service No. EJ 208 283)

Jenny, H. H., & Minter, W. J. (1993). Updating financial ratios: Seeking greater understanding, precision, and practicality. NACUBO Business Officer, 27(5), 31-35.

John Minter Associates, Inc. (1994). Management ratios #8 statistical norms for colleges & universities. Boulder, CO: Author.

Kramer, M. (1982). What the new indicators cannot tell us. New Directions for Higher Education; No. 38 (Successful Responses to Financial Difficulty), 10(2), 99-110. (ERIC Document Reproduction Service No. EJ 268 465)

Lane, F. S., Lawrence, J. S., & Mertins, H., Jr. (1987). University financial analysis using interinstitutional data. New Directions for Institutional Research; No. 53 (Conducting Interinstitutional Comparisons), 14(1), 83-101. (ERIC Document Reproduction Service No. EJ 351 010)

Lewis, D. R., & Wasescha, A. M. (1987, February). Costs and benefits of assessment in post-secondary education. Paper presented at the 1987 Association for the Study of Higher Education Annual Meeting, San Diego, CA.

A little learning. (1997). The Economist, 345(8047), 72-73.

Lupton, A. H., Augenblick, J., & Heyison, J. (1976). A special report: The financial state of higher education. Change, 8(8), 20-35.

McCoy, M. (1982). The utility of HEGIS finance data: A researcher's perspective. Working Paper Series. Boulder, CO: National Center for Higher Education Management Systems. (ERIC Document Reproduction Service No. ED 246 808)

Miller, D. E. (1972). The meaningful interpretation of financial statements: The cause-and-effect ratio approach. New York, NY: American Management Association, Inc.

Miller, R. I., & Miller, P. M. (1991). Cost-effectiveness and cost-reduction in United States colleges and universities. Higher Education Management, 3(3), 269-282. (ERIC Document Reproduction Service No. EJ 436 159)

Minter, J., Hughes, K. S., Robinson, D. D., Turk, F. J., Buchanan, A. D., & Prager, F. J. (1982). Using ratio analysis to evaluate financial performance. New Directions for Higher Education; No. 38 (Successful Responses to Financial Difficulty), 10(2), 25-38. (ERIC Document Reproduction Service No. EJ 268 456)

Murphy, S. D., & Eddy, J. P. (Eds.). (1998). Current issues in higher education: Research and reform. Landham, MA: University Press of America.

Nicklin, J. L., & Mercer, J. (1998). Amid stock market volatility, colleges hold their positions. The Chronicle of Higher Education, 45(3), A43-A45.

Patrick, C., & Collier, D. J. (1979). A validity check on the HEGIS financial data. New Directions for Higher Education; No. 26 (Assessing Financial Health), 7(2), 75-80. (ERIC Document Reproduction Service No. EJ 208 290)

Petro, J. (1998). Fiscal indicator reports and ratio analysis: Benchmarking Ohio municipalities and school districts. Government Finance Review, 14(5), 17-22.

Pratt, L. R. (1993). Quality or access? Academe, 78(7), 8-9.

Roden, J. K. (1991). Using financial ratio analysis to describe the relative fiscal health of selected publicly funded institutions of higher education in New York State. Unpublished doctoral dissertation, The Ohio State University.

Schmidt, P., & Selingo, J. (1999). Colleges hope 1999 legislatures will provide financial security. The Chronicle of Higher Education, 45(18), A34, A47.

Shapiro, H. T. (1993). Current realities and future prospects. Academe, 78(7), 10-16.

Taylor, B. (1984). Monitoring the financial condition of colleges and universities. AAHE-ERIC higher education research currents (pp. 7-10). Washington, DC: American Association for Higher Education. (ERIC Document Reproduction Service No. ED 252 141)

Updegrove, D. A. (1982). Computer modeling for comparative financial assessment. New Directions for Higher Education; No.38 (Successful Responses to Financial Difficulty), 10(2), 45-48. (ERIC Document Reproduction Service No. EJ 268 458)

Woelfel, C. J. (1987). Financial statement analysis for colleges and universities. Journal of Education Finance, 13(1), 86-98. (ERIC Document Reproduction Service No. EJ 368 800)